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Railway Steel Shortage

ANY hope which may have been entertained that the railways would be able to improve on the reduced steel allocation made to them have now faded. The most that can be expected is that it may be possible to achieve some slight easement in the position at the end of the year. Meantime, the effect on the various works of British Railways is becoming increasingly grave and it appears probable that the large-scale dismissals of men will become inevitable. It seems unlikely that it will be possible to proceed with the construction of any new passenger stock and that locomotive and wagon building will have to be curtailed drastically. The long-term effect of these measures must be grave not only to the railways but to British industry as a whole, by reason of the lowered efficiency of the transport system which must be the outcome. The dismissal of skilled men from railway workshops is not to be lightly undertaken for there can be little doubt that their recruitment again, when the need arises, will prove extremely difficult, if not impossible. Many of them are in grades which will be readily absorbed in other forms of industry. Moreover, the idleness of machines in which much capital has been sunk will be a serious loss to national productivity. Under the terms of the Transport Act the British Transport Commission is not permitted to engage in manufacture for outside interests. This was a reasonable prohibition at the time of the passage of the Act. Its main purpose was to prevent any competition with private manufacturers. In present circumstances, however, it might be well worth while to explore the possibility of permitting railway works to participate in the defence programme. If this could be done—and Parliament, which opposed the prohibition, would have to give its sanction and attach due safeguards—the machines and manpower available at the railway works could be kept productively employed. To the extent that such a course eased the pressure of defence needs on outside manufacturers the latter would be in a better position to maintain and improve their export connections. The ultimate factor must remain the steel position, but it would be in the highest degree unwise in present circumstances to force a position in the railway workshops which it might be impossible to rectify for many years after the first stringency in steel is passed.

Capital Investment Urged for Railways

COMPLAINTS at the physical condition of the railways at the time of nationalisation have by now become fairly familiar, but it was a novelty to hear a speaker in the debate on the second reading of the British Transport Commission Bill refer to the "deplorable state" of parts of the system at the outbreak of war. This statement was qualified by the remark that it applied to sections other than the main lines, but even so it conveyed an unfair picture of overall neglect. It is permissible to recall in reply the extensive use of diesel railcars by the Great Western Railway to improve services on secondary routes, and the benefits brought to large areas by the various Southern Railway electrification schemes. Other speakers acknowledged the difficulties of the railways in obtaining steel for replacements of rolling stock and a plea was made for fairer allocation of materials. There was general agreement on the need for increased capital expenditure on the railways, and one speaker concluded with a plea that party politics should be kept out of the transport system. It is a pity they cannot also be kept out of some types of discussion, to save time spent on generalisations purporting to show, as on this occasion, the deficiencies the Railway Executive has "inherited from the private enterprise system."

More Buffet Cars Replace Restaurant Service

IN replacing restaurant cars with buffet cars on a further 40 services, the Hotels Executive no doubt has satisfied a large section of the travelling public. At the same time there must be many travellers who will regret the absence of full restaurant car service on some of the trains mentioned on another page this week, particularly those on the longer journeys, such as St. Pancras to Edinburgh. It can be argued that on this route, as on the Marylebone-Manchester trains similarly dealt with, most of the traffic is between intermediate stations, but in principle the curtailment of facilities available for those prepared to pay for them is not the happiest way of advertising the amenities of railway travel in Great Britain. In air transport, where all operators offer similar inducements in the form of speed, the highest importance is attached to catering as a means of attracting traffic to a particular service. It is evident from the decision taken this week, to continue the operation of the "Devon Belle" Pullman train on the Southern Region this summer, that the demand for special amenities exists. Earlier it had been announced that the train would not run, but it has been decided since to provide a "Devon Belle" service at weekends.

An Important Mexican Railway Nationalised

A RAILWAY transaction of considerable importance took place in Mexico at the end of 1951. On December 21, as mentioned in our January 11 issue, the National Railways of Mexico, which have been gradually acquiring the privately-owned railway system in the country, took over the largest of the remaining independent lines, the Southern Pacific Railroad Company of Mexico. Though constituted by Mexican law as a separate company, the S.P. of Mexico was a subsidiary of the Southern

Pacific Company of the U.S.A., and its 1,106-mile main line from Nogales, on the U.S.A.-Mexico border, down the west coast of Mexico to Guadalajara, where it connected with the National Railways line from Manzanillo to Mexico City, made possible a through journey of all but 2,800 miles from Portland, Oregon, to Guadalajara entirely on Southern Pacific metals. The main use of the Southern Pacific of Mexico has been for freight traffic between California and Mexico City; one daily passenger train called "El Yaqui," taking 54 hr. for the 1,106 miles, has provided the only passenger service. For the 1,316 miles of track and equipment, the Mexican Government has paid sums totalling $3,000,000 in cash and $9,000,000 in serial bonds.

Overseas Railway Traffics

DURING the first month of the current financial year Canadian Pacific and Canadian National railways' net earnings fell sharply as a result of further advances in working expenses. The drop in C.P.R. net earnings amounted to £429,000 at £40,000 and the increase in working expenses was by £1,047,000 to £11,494,000; gross earnings were £618,000 higher. On the C.N.R., net revenue for January was £70,000, as compared with £957,000 for the equivalent period of 1951 and operating expenses rose from £14,679,000 to £17,087,000. Traffics of the Antofagasta (Chili) & Bolivia Railway continued to improve during the fortnight ended February 22, so that total receipts for the eight weeks to date are now up by £410,240 at £1,103,800. During the two weeks under review there were successive advances in receipts by £83,560 and £88,550, to £140,830 and £141,290.

Motive Power Department Organisation

SOME interesting details of the organisation within the Western Region Motive Power Department, which ensures efficient liaison between various departments, were brought out by Mr. W. N. Pellow, Motive Power Superintendent, at a recent meeting of the Western Region, London Lecture & Debating Society. The subjects covered included the general maintenance of steam locomotives and other forms of motive power, scheduling of intermediate examinations, periodic repairs arranged on a time or mileage basis and engine history cards which record locomotive movements, mileage earned, and repairs. One innovation on the Western Region is the Shed Analysis Committee, consisting of four members experienced in shed working whose function is to visit running sheds as observers, and tabulate all movements for a continuous period of 72 hours. Subsequently the information is set out in graph form for the purpose of analysis.

Early Streamline Ideas

THOUGH it is widely known that streamlining of trains did not begin historically with the well-known superspeed trains in various parts of the world during the thirties, there is no clear recognition of just when "aerodynamic shrouds" did begin. The earliest proposals seem to go back well over 80 years, for on August 6, 1865, a U.S.A. patent was granted to the Rev. Samuel R. Calthrop, of Roxbury, Mass., which showed the patentee to be fully aware of all the factors governing the air resistance of trains. The proposals were intended specifically "to diminish atmospheric resistance," not only head-on but with winds from all quarters. The principal means were: (*a*) by tapering front and rear; (*b*) by putting in a false bottom below the coaches; (*c*) by raising the tender to the same height as the locomotive, and giving it the same contour; (*d*) covering in all train platforms and spaces between the coaches, and between tender and train; and (*e*) by avoiding all projecting surfaces such as window ledges. Of course, the proposals referred to possible applications to steam locomotives and their trains, and it is a reflection of Calthrop's thought on the subject that he proposed a full set of hinged inspection doors to facilitate locomotive and carriage bogie maintenance.

Motive Power for West Africa

THE recent delivery of three 200-h.p. Wickham diesel-mechanical railcars to the Loanda State Railway maintains a long connection between the British motive power industry and this Portuguese colonial metre-gauge line, now 385 miles long. The 149-ton eight-coupled Beyer-Garratt locomotives delivered since the war, and forming a modification of the "light war standard" design, are well known. They were described, and a profile of the line was given, in our March 18, 1949, issue. Almost 30 years ago, when the line was much shorter than now, Armstrong-Whitworth was to the fore in building freight and passenger locomotives at the Scotswood works. The first batch was to a 60-ton 4-8-0 design with wheels of 1 m. dia. and 19 in. by 22 in. cylinders. The second batch were 4-6-0s weighing 41 tons and with a 10-ton maximum axle load, but they had the same wheels and same spacing between each coupled axle as the 4-8-0. Their cylinders were only 15 in. by 22 in., and they had a working pressure of 160 lb. compared with the 170 lb. of the freight engines. The Wickham 36-seat diesel railcars keep to fast schedules in services for European passengers from Loanda to Malanje.

Through Locomotive Running

IN the years between the wars, much was done to increase the length of through locomotive runs in Great Britain, in order to secure better use of locomotives. Through workings of L.M.S.R. Pacifics over the 401½ miles between Euston and Glasgow were the general practice, as also of "Royal Scot" 4-6-0s over the 299 miles between Euston and Carlisle and on certain trains non-stop; while the L.N.E.R. equally made it a rule to work Pacifics through over the 268¼ miles between Kings Cross and Newcastle, and, in the case of the non-stop "Flying Scotsman" and the "Coronation" streamline train, over the 392¾ miles between Kings Cross and Edinburgh. Such distances as these were but modest in comparison with those of contemporary train operation in the United States and Canada, where, until diesel-electric locomotives took over all the principal passenger workings, through steam locomotive runs of 900 to 1,000 miles were not uncommon and the Santa Fe Railway achieved a record with regular through running of steam locomotives over the 1,778 miles between the Argentine station at Kansas City and Los Angeles. But the 4-8-4 locomotives used on the last-mentioned duty have the advantage of very large fire-grates, mechanical firing and grate-shaking, a high standard of maintenance, and time allowed for servicing *en route* at various divisional points.

Changing Engines Intermediately

POST-WAR locomotive operating conditions in Great Britain have put a different complexion on long through locomotive runs. Such working depends on first class boiler maintenance, on the free steaming which is dependent on clean boiler tubes, and on a reasonably good quality of coal. In these days of labour shortage and poor coal, these desiderata are all too often lacking, and not a little of present unpunctuality is thereby explained. It is not unknown for an express like the "Royal Scot," nominally non-stop from Carlisle to Euston, to have to stop specially at Rugby in order that the engine, working through from Glasgow, may run to the coal stage and get its coal supply replenished. The Eastern Region has dealt boldly with the difficulty by reverting to the former practice of changing locomotives at Peterborough and Grantham. This has had the advantage of restoring to full main-line status a locomotive depot like Grantham, where, because of its country location, and reduced competition of other forms of industry, labour is easier to obtain than in the large industrial centres, and a higher standard of locomotive maintenance and manning is therefore possible. The effect of this change, with no more than double-manning of the bigger express engines as far as possible, has been a noticeable improvement in punctuality on the East Coast main line.

Higher Passenger Fares

ELEVEN months after the Passenger Charges Scheme, 1951, was first submitted by the British Transport Commission to the Transport Tribunal, that portion of the amended scheme which applies to London Transport rail and road and to British Railways fares within the London Area as defined in the scheme, came into force last Sunday; the remainder of the scheme, which relates to British Railways fares outside the London Area, is to apply from May 1. The Passenger Charges Scheme, 1951, as eventually submitted, after modification to offset wage increases during the protracted hearing before the Tribunal last autumn, was designed to produce some £22 million additional revenue in a full year. The Passenger Charges Scheme, 1952, as the 1951 scheme, amended by the Tribunal and published on January 18, is called, is estimated in its entirety to yield some £13·4 million additional income in a full year. Details of the 1952 scheme are given elsewhere in this issue.

The scheme must, however, be considered in its parts. The fare alterations from March 2 are expected to bring in £9·4 million in a full year from London Transport services. The alterations in British Railways fares, both in the London Area from this week and in the provinces from May 1, may yield £4 million, although the nature and extent of the alterations which the Commission is empowered by the Tribunal to make in railways are not yet fully known. To this must be added the 10 per cent. increase in monthly return fares which took effect on January 1, which is calculated to bring in £3·2 million annually; this formed part of the 1951 scheme, though the B.T.C. is under no statutory obligation to seek authority for monthly return fares, as these are less than double the ordinary single fares. Apart from this, thirteen months will have elapsed between the lodgment of the 1951 scheme last April and the introduction next May of alterations in British Railways fares which with the other increases authorised may produce only some £13 million additional revenue in a full year. This is small in proportion to the total receipts of the B.T.C. from its carrying activities (£519 million in 1950, of which £207 million was produced by passenger traffic) and to its working expenses (£489 million in 1950). In view of the rapid increase in costs, emphasised by the necessity, referred to above, to modify the 1951 scheme in the light of wage increases awarded during the hearing, the results during a year's delay seem meagre indeed, and likely to have but little effect in improving the financial situation of the Commission.

The chief feature in the London Area fare alterations is the increase in season ticket rates by some 20 per cent., which cannot fail to cause considerable hardship; next in significance is the increase in London Transport ordinary bus and Underground and in London Tilbury & Southend line fares. In view of the obligation of the B.T.C. to pay its way, these increases in the price of essential transport are inevitable in the light of the rising cost of materials and wages, and seem on the whole to have been accepted by the travelling public as such. Of less financial significance, but of interest as an indication of the way in which the B.T.C. may deal with British Railways fares from next May, are the alterations in force from this week in British Railways fares, other than the Tilbury Line, in the London Area. The Tribunal has reduced the ordinary single fare from 2·44d. to 1·75d. a mile, which brings the former monthly fare, at slightly over a single fare and one-third, to more than double the new single fare; the new return fare amounts to 3·5d. a mile. The Commission has now abolished the monthly return ticket as such for journeys on British Railways in the London Area, though, for approximately the same amount, the passenger can obtain an ordinary return ticket valid for three months instead of one.

Whether a similar principle will be followed in the case of the reduction in ordinary railway fares outside the London Area which is to take place in May, is problematical. It has been suggested that the compulsion to reduce the ordinary single fare from 2·44d. to 1·75d. a mile is based on the bad psychological effect of the high single railway fare compared with the lower corresponding fare of provincial bus undertakings, combined with inevitable reduction in the railway return fare (now the monthly return) which produces over one-third of the receipts from ordinary tickets. The maximum which the Commission will be empowered to charge for a return railway journey will be 3·5d. a mile, third class, so that the present return fare of some 3·6d. a mile in the case of the monthly return ticket must be slightly reduced. The Commission may not, however, see fit to raise its charges to the prescribed maximum.

Even with the increases authorised by the Transport Tribunal, both this week and on May 1 next, the increases in the price of travel will average only some 75 per cent. above pre-war, which compares favourably with other retail prices and with the increase of well over 100 per cent. in the working expenses of the transport undertakings.

Replacement of Wasting Assets

THE provision for replacement of assets at price levels current in the year of account, with particular reference to the statement and taxation of profits after such provision, is receiving much attention in view of the present continued rise in prices. It has been referred to from time to time in this journal, when attention has been drawn to the difficulties of providing for depreciation by reference to historical costs. An article in the March issue of *Accountancy*, by Mr. L. C. Hawkins, a Member of the London Transport Executive, who writes as a Council Member of the Society of Incorporated Accountants & Auditors, sets out to discover the implications and mechanics of replacement cost accounting, whether for balance sheet or taxation purposes, on the assumption that the principle of replacement accounting has been agreed and it only remains to work out a system for applying it.

In view of recent criticism of the steps taken by the main-line railway companies to maintain their assets before the war of 1939-45, Mr. Hawkins' reminder is timely, that the principle of providing for asset replacement at current price levels was followed for many years by the railway companies; at one time some of them charged each year's revenue with the sum that would have been spent in that year if a normal quota of renewal work had been carried out—a forerunner, he points out, in the realistic terms of so many physical assets to be renewed each year, of the principle of replacement costs that is argued for today. Before 1939, all the main-line companies were setting aside annual renewal provisions calculated at the price levels of the year, a practice confirmed by the Railway Rates Tribunal; under the statutory double-account system the capital account never did reflect the cost of the assets actually in use, for "like-for-like" replacement cost, at current prices, was met out of revenue and only the cost of additions and improvments (or "betterment") was capitalised.

This treatment of expenditure on asset formation, Mr. Hawkins states, would scarcely be popular today; industrialists and accountants would require a balance sheet to reflect the actual cost of assets in current use. He goes on to expound a method of reconciling this requirement with the principle of accounting by reference to replacement costs. To operate it, three things must be done: first, to calculate depreciation on original costs, just as it is calculated at present; second, to calculate and accumulate, quite separately, the further provisions necessary to equate provisions based on original cost to current price levels; and third, to assess "like-for-like" replacement costs when an asset is renewed: this last is the culmination of replacement cost accounting, for it is the cost of like-for-like renewal—not original cost—that replacement provisions are designed to cover. If this is done, the balance sheet can show, on the one side, the original cost of the assets, less depreciation, and on the other side, the replacement provisions set aside for higher prices, sub-divided

so as to earmark the portion already used to meet the excess of like-for-like replacement cost over original cost and the portion still available for future use. If prices became stabilised, reversion to original cost accounting would be automatic.

In taxation, Mr. Hawkins shows, the principle of allowing cost of renewals before tax is not new. Wear and tear is permissive, not compulsory, and an undertaking presumably can charge its actual like-for-like replacement expenditure instead of wear and tear. The incidence of taxation, however, would be even more hazardous than it now is if wear and tear were granted on current replacement prices year by year, and balancing charges and allowances were computed by reference to original cost. When replacement occurred, large sums of tax would be repayable, with unforeseeable results. The Inland Revenue could scarcely be expected to grant supplementary allowances to cover varying price levels without some check that, in total, more was not allowed than the like-for-like replacement cost of assets renewed.

One method he suggests would be for wear and tear to be computed on original cost, just as it is now, with supplementary allowances to equate each year's wear and tear to current price levels, and for balancing charges and allowances to be determined by contrasting like-for-like replacement cost with the sum of wear and tear granted on original cost plus supplements granted for higher prices plus scrap values. Both the Inland Revenue and the taxpayer would then be assured that, in total, no more, and no less, than like-for-like replacement cost at the date of renewal was allowed or recovered before tax.

Mr. Hawkins also deals with the method of computing replacement provisions and like-for-like replacement costs at current price levels. Depreciation percentages, he states, although often taken to represent true depreciation, are really only a convention, and there seems to be no reason why an equally acceptable convention should not be built up for computing replacement prices. Index numbers reflecting differential price levels year by year for each main category of plant and equipment could be agreed between nominated parties, and be published, just as wear and tear percentages are agreed and published. These index numbers could be used first to equate original cost to the price level of a base year, say 1952, and the base year values so brought out could be equated, up or down, to the price level of the year of account or the year of renewal simply by applying the appropriate index number.

Trans-Zambesia Railway

THE report of the Trans-Zambesia Railway Co. Ltd., for the year ended December 31, 1950—a copy of which we have received from Mr. Vivian L. Oury, the Chairman—states that the revenue account, including the figures of the Southern Approach, shows receipts totalling £519,990. This sum includes interest on investments, £1,700, and is £65,178 higher than the figure for 1949.

Expenditure during 1950 inclusive of provision for renewals and taxation was £461,967, or 89·13 per cent. of the gross receipts; comparative figures for the previous year were £391,750 and 87·11 per cent. After certain adjustments a surplus of £58,023 was available, compared with £63,062 the year before. After meeting the service of the 3½ per cent. debenture stock, £8,805 was available for interest on £1,500,000 5 per cent. income debentures.

The following are some of the principal results: —

	1949	1950
Goods tonnage	246,469	281,240
	£	£
Goods receipts	370,907	422,708
Livestock and vehicle receipts ...	2,927	6,304
Passenger receipts	61,199	73,406
Luggage and parcels receipts	8,387	9,829
Gross receipts	449,708	518,290
Working expenses	391,750	461,967
Surplus	57,958	58,023

Gross receipts under all the principal headings increased substantially, but the total increase was less than that in expenditure by over £3,600. The rise in expenditure was due mainly to enhanced salaries and wages, and costs of all stores and materials, which also suffered from the 60 per cent. surcharge imposed by the Conference Shipping Lines in February, 1950, on sea freights to Beira. There was, however, a decrease in miscellaneous expenses of £15,000, mainly due to the arrival of new locomotives making the hire of engines from other lines no longer necessary. The surcharge was withdrawn at the beginning of 1951. The rise in passenger receipts was over 20 per cent. compared with 1949.

Improvements in conditions at the port of Beira and the new "G" class locomotives and rolling stock enabled the 6,000-ton back-log of imports awaiting haulage to Nyasaland at the beginning of the year to be eliminated before its end. Two more "G" class engines were ordered and delivery is expected about the middle of next year. Rising costs compel consideration of increases in rail charges, which are still at prewar levels. The new mineral wharf and oil wharf at Beira are expected to be completed early in 1952, when the construction of two more wharves is likely to be taken in hand. Meanwhile, imports and exports handled during the first seven months of 1951 were 22 per cent. higher than in the same period last year.

New Signalling in the Netherlands

PROBABLY not a few signal engineers, occupied with the problem of signal aspects and desirous of applying something better adapted than time-honoured methods to the changing demands of traffic, must have wished for the chance to start with a clear field and not have to take existing practice into account. Ordinarily that would be practically impossible, but conditions after wars have at times been such that a certain degree of opportunity to act in this way has presented itself. After the 1914 war, for example, L.P.A. Weissenbruch, well-known not only as a signal engineer but as Secretary of the International Railway Congress Association, convinced that the 3-position semaphore offered such facilities, and that experience in America had proved it, took the decisive step of introducing that signal on the then Belgian State Railways. Power operation being out of the question, except at a few large stations, he had recourse to the double-wire system of mechanical transmission, adopted some years before as standard on those railways, without which accurate working of the signal arms would have been unattainable. Fortunately the general principles of the Belgian signal system were such that no dangerous confusion could arise between the old and new arrangements. At that date the colour-light signal had not been recognised generally as suitable for main-line service although there were signs that this development would take place. Whether the ideas of Weissenbruch would have taken a different course had that type of signal reached a more advanced stage of design at that time can only be conjectured.

At the end of the recent war a similar situation, though accentuated by greater damage, arose in the Netherlands, and the problems to which this gave rise came to be considered additionally in the light of providing improved signalling for the expanding network of electrified routes, where the use of overhead conductors bore on the question of the type of signal to be used generally so as to give maximum visibility of the indications. By this time, however, the colour-light signal had become widely accepted, and could be used, with approach lighting, even on sections where no power supply was available. It had hitherto seldom been applied in the Netherlands, and where it had been, it gave the same indications as were shown by night by the existing semaphores, no new principle of operation being involved. The Netherlands mechanical signal system had given every satisfaction, and a very high standard of freedom from accident had been attained with it. It was fundamentally a 2-aspect home and distant system, with route aspects at junctions and other points of divergence, and had many points of similarity with British methods.

Faced with the necessity of making some changes and replacing or rebuilding much work, Mr. J. H. Verstegen, Signal Engineer, Netherland Railways, sought to apply new principles and produce a system of aspects fully

adapted to modern requirements on the electrified lines, free from all risk of confusion with the existing signals. The results are set out in their broad essentials in an article in this issue. The route system has been abandoned in favour of speed signalling aspects, somewhat different from those hitherto known to signal engineers. The fundamental idea of recognising, and signalling for, three ranges of speed has long been known, especially in America, where the use of three signal units arranged vertically was first applied for this purpose. In the Netherlands system the units not in use at a given moment do not show red lights, but—if they are not dark—a neutral colour, lunar white, serving to register the position of the coloured light or lights then being exhibited. The method by which a signal authorising a certain speed informs the driver that the next one in advance imposes a lower speed is interesting in that green lights only are seen; and in no case do two signalling colours appear simultaneously, lunar white not being in this category but simply a locating sign.

Whatever opinions may be held about the advantages or otherwise of this new system of aspects, signal engineers will certainly congratulate Mr. Verstegen on having seized so effectively the opportunity afforded by conditions created by the war. The new signals are already in use at several stations and the running staff are stated to have found no difficulty in understanding and obeying their indications.

British Railways Freight Traffic in 1951

THIS article reviews the freight traffic operations of British Railways in 1951 in the light of the information given by *Transport Statistics* for the 52 weeks to Sunday, December 30. Being a full working day, December 31 would add its quota to the aggregates for 52 weeks. The statistics for the whole year may be adjusted for other reasons before the British Transport Commission's next report publishes them in their final form, but these modifications will not alter the findings about the main trends of development. For our present purpose, the 52 weeks' aggregates can be treated as last year's totals and compared with the results for 1950 and previous years.

The tonnage originating was 283,672,000, an increase of 2,324,000 tons on 1950 (0·8 per cent.), but fully 4·5 per cent. below the 297,152,000 tons forwarded in 1937 by the former railway companies. The decline in merchandise since 1948 was checked, though by the narrow margin of 47,000 tons (0·1 per cent.) over 1950, forwardings being still 3·1 per cent. below 1948. Minerals were up 645,000 tons (1·1 per cent.) and coal class traffic by 1,706,000 tons (1·0 per cent.). Of the six Regions, the Western had the largest increase in tonnage—1,360,000 (2·9 per cent.) spread over all classes of traffic. An increase in the London Midland Region of 789,000 tons (1·0 per cent.) was due entirely to minerals and coal; its merchandise decreased by 322,000 tons (2 per cent.).

Net ton-miles were estimated at 22,843 million, 722 million, or 3·3 per cent., more than were worked in 1950. The Regions do not work ton-mileages in proportion to their originating tonnages. The North Eastern Region, for example, originated 22·5 per cent. of the total tonnage, but worked only 10 per cent. of the total ton-miles. Again, the Eastern Region forwarded 3,030,000 fewer tons than the Western, but worked 391 million more ton-miles. In both the Eastern and London Midland Regions coal and coke accounted for more than 50 per cent. of the ton-miles worked.

Last year the average ton of all classes of traffic was carried 75·7 miles, 1½ miles further than in 1950. Over the last 30 years the length of haul has grown steadily. From 52 miles in 1923 it rose to 58 in 1937 and reached a peak of 79 miles during the war. The upward trend resulted in the smaller tonnage of 1951 producing 24 per cent. more ton-miles than were worked in 1937.

In coping with the larger volume of transport, British Railways worked 124,737,000 loaded freight train miles, 1,097,000 more than in 1950 (0·9 per cent.), and 16,595,000 empty train miles, 711,000 less than in 1950 (4·1 per cent.). Total freight train mileage was thus higher by 386,000 miles (0·3 per cent.). Freight train hours in traffic were, however, up by 166,000 (1 per cent.), mainly through an increase of 158,000 hours in the Western Region (5·5 per cent.). Some of the additional engine time would seem to have been spent to little purpose as the Western Region worked only 335,000 more train miles, an increase of 1·3 per cent. In contrast, the Eastern Region worked 286,000 extra freight train miles (1·1 per cent.) by means of 6,000 additional train engine hours (0·2 per cent.).

The London Midland was the only Region to work fewer freight train miles last year. It reduced train miles by 953,000 (2·1 per cent.), with a cut in train engine hours of 10,000 (0·1 per cent.). This saving in train engine time was small in comparison with an economy in shunting engine hours of 139,000 (2·4 per cent.). The other Regions, except the Scottish, also kept shunting engine hours down; the decrease for the whole system was 200,000 (1·1 per cent.). The decline in the time spent on shunting has been continuous since 1948, but the downward trend was not so steep in 1951. The Table below brings out the great difference between freight engine working in present conditions and in 1937, when private owners' wagons were in general use and through running was not so easy as it is today.

1. FREIGHT ENGINE HOURS IN TRAFFIC (THOUSANDS)

Hours	1937	1951	Increase or decrease on 1937	Increase or decrease per cent.
Train	16,291	17,025	+ 734	+ 4·5
Shunting	20,332	17,722	−2,610	−12·8
Assisting and light running ...	2,863	3,608	+ 745	+26·0
Total	39,486	38,355	−1,131	− 2·8

In 1937 the percentage of shunting hours to the total was 51·5; by 1951 it fell to 46. On the Great Western Railway the 1937 percentage was 56 and on the London, Midland & Scottish 49. In 1951 the percentage for the Western Region was 49 and for the London Midland 42. Unification has not eliminated all the characteristic features of the former companies.

Table 2 shows that British Railways failed to maintain last year the progressive improvement in freight train speed which began in 1948.

2. FREIGHT TRAIN SPEED (M.P.H.)

Region	All Regions	London Midland	Western	Eastern	North Eastern	Scottish
1948 ...	8·17	6·99	9·15	7·92	9·76	9·60
1949 ...	8·30	6·99	9·24	8·19	10·17	9·84
1950 ...	8·36	7·10	8·83	8·39	10·08	10·22
1951 ...	8·31	6·99	8·49	8·48	10·28	10·42

Movement was slower in the London Midland and Western Regions, although they ran 4 per cent. less coaching train miles and would have more room for freight trains on some sections of line.

With a record train load of 184 tons, the London Midland Region worked only 1,054 net ton-miles in a train engine hour. The Western Region's output was 1,105 net ton-miles, the Eastern's 1,224 and the North Eastern's 1,399. British Railways raised the train load by 4 tons to 161 tons and turned out 1,107 net ton-miles in a train hour. These are all-time high figures for this country, but are dwarfed by the U.S.A. train load of 1,299 short tons and the hourly output of 21,720 net ton-miles by these huge trains, moving at twice the speed of our average goods and mineral train.

The privately-owned and -managed lines in the United States are remarkable for their quickness in surmounting crises in freight movement. Their go-ahead methods of handling traffic blocks, wagon shortages and exceptional demands for rail transport are a great contrast to the weakness of British Railways in dealing with operating defects in South Wales and the Midlands, which persisted throughout 1951 and depreciated the year's results.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Royal Funeral Train Locomotive

February 29

SIR,—I do not think that Mr. A. C. Smith is justified in harshly criticising the Western Region authorities for their failure to provide the genuine *Windsor Castle* for the funeral train of the late King George VI. Surely no one could have foreseen that the engine would be needed so soon; indeed, His Majesty's death came as a surprise to the whole world.

Secondly, there is little reason to think that the railway authorities hoped that the substitution of No. 7013 for No. 4082 would go unnoticed. The so-called "detail" differences between the two series of "Castle" class engines involved are considerable, and would be obvious to anyone, inside or outside the railway service, who has any knowledge of the class as a whole.

Lastly, "Castle" class engines were being built up to 1950, and it will be many years before they are all withdrawn: the question of preservation can hardly be important at the moment.

Yours faithfully,

P. J. LYNCH

3, William Way, Letchworth

February 25

SIR,—Whilst the transfer of the nameplates of the locomotive which hauled the Royal Funeral Train was justified by the fact that the original 4082 was under repair, the transfer of the numberplates would convey nothing to any but railwaymen or enthusiasts, and in combination with the transfer of the commemorative plates gives the impression that a definite attempt was made to present this locomotive as the original 4082.

It is surprising that this should have been done, for it must be well known to hundreds of railway officials that such a deception cannot escape the attention of the well-informed amateur railway fraternity, and if revealed by outsiders, assumes an unpleasant air. It is pleasing to see that the Western Region has since announced that the transfer is to be made permanent, which is a suitable penance for the incident.

Despite the metamorphoses which a modern locomotive undergoes during repair, the history of any particular unit is usually continuous, and it can be claimed that, except where a complete renewal has been made, the present occupant of a number retains the identity of the original locomotive, as much as it retains the same life history in the records of the locomotive works.

Yours faithfully,

A. F. COOK

Engineering Department, University College, Southampton

Traffic Apprentice Schemes

February 29

SIR,—It is a pity that Mr. G. W. Howe, in your February 22 issue, did little more than re-state the familiar objections to the traffic apprentice scheme—age and the reaction of the less fortunate. Is experience necessarily an attribute of age and is it not sometimes confused with seniority? Constant practice can produce skill at a particular process but such skill is no proof of administrative or executive ability. An Admiral is more concerned with using his ships than being able to maintain them.

Mr. Howe suggests a supplementary period of training in charge of a station or depot. Surely this is just what does happen? Mr. Howe may find himself in competition with a traffic apprentice, emerging from the chrysalis stage, when he applies for a Class 1 stationmaster's post. But let me not over-rate the danger. The annual appointment of traffic apprentices amounts, I estimate, to about 0·008 per cent. of the total staff (alarmingly small for a progressive business undertaking) and, as they take their chance with the rest for promotion, their privileged position is more apparent than real. Only the most naive are deceived by this. Is all the money spent on training them to be wasted in this way? It is more probable that the railways are ensuring the best of two worlds. If their judgment in selecting traffic apprentices proves faulty they have a reserve on which to call.

The responsibility resting upon the selection committee is, in spite of this relief, grave, and, as I have said in your columns before, I am doubtful of the reliability of this method of selection.

I should prefer to see something based on the Civil Service country house technique. The written examination indicates an adequate academic knowledge and no doubt is carefully designed to indicate the way the mind works. Those to be considered would then be assembled at one of the more secluded residential schools, where they would be set suitable exercises to test their managerial potential. Under watchful eyes, including those of a competent psychologist, their reactions would be noted and their performance in action assessed. Some suitable problems might be: negotiating with a stubborn local departmental committee, meeting a deputation of traders, preferably discontented, an application for an exceptional rate, interviewing applicants for promotion, preparing a new works scheme, and so on. Outside, a closed branch line could be used to stage a derailment to provide tests of leadership and ingenuity.

Yours faithfully,

GEO. F. THOMLINSON

56, Stockens Green, Knebworth

Missed Connections

March 4

SIR,—Mr. Cecil J. Allen, in his letter in your February 29 issue, is under the impression that because Doncaster is 156 miles from London it takes longer to obtain authority from London than to make a local decision. In fact, there is a through telephone line to the central control and the distance is not a factor which causes delay.

As to whether a long-distance express train should be stopped specially for a few passengers who are held up because of a missed connection, while one can be sorry for them and understand their feelings, it is usually better to confine the delay to these few rather than to stop an express and spread the delay over a much wider field.

Yours faithfully,

M. B. THOMAS
Public Relations & Publicity Officer

Eastern Region, Marylebone Station, N.W.1

Railway Carriage Design

February 11

SIR,—In recent correspondence on this subject, one important point seems to have been overlooked. A British Railways standard third class compartment coach seats only 48 passengers in comfort; the "four-a-side" figure of 64 is achieved only by packing sufficiently close to make many people prefer to stand in the corridor. An open coach, however, does seat 64 in reasonable conditions.

Paying a higher fare, the rail traveller is surely entitled, not only to greater speed, but to greater comfort, than the coach traveller, yet the individually adjusted "armchair" type of seat, long used by road and air operators, has yet to appear on British Railways. Any form of seating where alternate rows of seats face each other is wasteful, as space is lost between those seats which are back-to-back unless the backs of the seats are uncomfortably near to the vertical; the usual result is insufficient legroom.

The road coaches used on the London to Glasgow and

Edinburgh services seat 30 passengers in much greater comfort than any British third class railway coach; they also accommodate a driver and a toilet—admittedly very small—in a vehicle of only 30 ft. × 8 ft. in overall dimensions. Surely similar seating with all seats falling in the same direction, for 64 or even 72 passengers, could be provided in a railway coach? If desired, the division of the vehicles into two or three sections might not be too wasteful, and would give the choice of forward, or rearward-facing seats. The cost, using standard units, should be no higher than for compartment stock.

As for bogie design, now that carriage building has had to be suspended because of the steel shortage, the time seems opportune for a modest research programme.

If done in such a sequence as measurements on existing stock, to determine what does happen at speed, followed by the construction of special models, and finally a few full-size experimental bogies, valuable results might be achieved in as short a time as two years, at a cost of the order of only £50,000. Even the obvious experiment of mounting a ciné-camera on the underframe of a carriage and photographing the bogie would, I feel certain, shock the authorities into further action!

Yours faithfully,

J. RODGERS

165, Priests Lane, Shenfield, Essex

Economics of Diesel Traction

February 22

SIR,—Mr. Latham's letter in your February 8 issue seems to have been prompted more by a desire to disbelieve than to be instructed. As the fuel consumption figures published refer to the winter season it is safe to say that the needs of the boiler have been catered for, unless someone has gone to the trouble of carefully measuring its consumption separately. The economy of the diesel over the full year should therefore average rather more than 6d. a mile. Perhaps Mr. Latham has used the time-honoured but still dishonest method of considering only the pithead price of coal in arriving at his conclusions.

As to his observations on electric stock user, he should surely know that its use is limited by its being a single-purpose type of stock provided, moreover, in sufficient quantity to deal with traffic having pronounced peaks. The locomotive, on the other hand, can always handle freight when the passengers do not want to travel—at least up to the point where reasonably full advantage can be taken of its high availability.

Mr. Latham's sympathy with Mr. Novak is significant, as Mr. Novak by his own confession has exhausted any welcome there might once have been in his own country's periodicals for his peevish illogicalities. If we are to believe him, almost all the managements of U.S.A. railways are either rogues or fools, much given to publishing outright lies about their achievements. Could it possibly be that Willie, and not the regiment, is out of step?

Yours faithfully,

A. H. HAMMOND

24, Herne Road, Surbiton

World Railway Speeds

February 29

SIR,—In your February 29 issue, after citing some of the achievements of the war-damaged railways of France, Germany, and Italy, and even those of two little countries, Switzerland and Denmark, all of which now have more daily mile-a-minute runs than this country, you say " it is an unhappy commentary on current conditions to see Britain, once the leader in railway speed, so far down the list."

Later in the article, after giving instances of outstanding speed performances by the pre-war private enterprise railway companies, you ask, " is the re-establishment of such standards and the spirit of enterprise that made them possible so completely out of the question today as is sometimes represented? "

The answer would seem to lie in your article, " N.U.R. Intransigence," on the previous page. It is surely unreasonable to expect people who, according to their own paper, *The Railway Review*, have to prepare " to meet the challenge " which is " truly and starkly a battle for survival " against their " enemies " (incidentally, also their fellow countrymen), and whose duty, according to the same paper, is " to prepare themselves with all the speed they can muster to recognise, expose, and ostracise traitors within their midst," to have any time left in such a busy week to give to the improvement of the lot of the travelling public. After all, what does the public matter in comparison with the class struggle about to be launched by the leaders of the N.U.R.?

Yours faithfully,

ROGER W. SEWILL

12, Carteret Street, S.W.1

Publications Received

Railways to Tintern and Coleford. By Thomas B. Peacock. London: The Locomotive Publishing Co. Ltd., 88, Horseferry Road, S.W.1. 9 in. × 5¼ in. 65 pp. Illustrated. Price 10s. 6d. —Comparatively little has been written on the railway byways of the Wye Valley and the Forest of Dean, and this collection of three travel essays will therefore be welcomed. The first describes a journey over the Wye Valley line of the former Great Western Railway from Chepstow to Monmouth. The second gives an account of the derelict Wire Works branch at Tintern, which originated as a tramway, built under the auspices of the Duke of Beaufort between 1836 and 1844. Of greater antiquity is the now-abandoned railway from Monmouth to Coleford, in the Forest of Dean, which forms the subject of the third essay. Built by the Monmouth Railway under powers obtained in 1810, it eventually passed into the hands of the G.W.R., and was closed completely on December 31, 1916. The illustrations include maps of the areas served by the railways, and reproductions of photographs giving an excellent impression of the picturesque scenery through which they pass.

Isothermal Transformation Diagrams for Nickel Steels. London: The Mond Nickel Co. Ltd. Sunderland House, Curzon Street, W.1. 9¼ in. × 6½ in. 57 pp. Gratis. Engineers concerned with the heat-treatment of alloy steels will find much of interest in a new publication issued by Mond Nickel Co. Ltd. Included is a useful set of Isothermal transformation diagrams which will materially help towards the understanding and control of the 13 British Standard EN steels illustrated in the book. A section is devoted to special heat-treatment, Martempering, Austempering and Isothermal annealing. The chemical composition of the various steels is given in tabular form.

Plastics in Industry.—A survey of recent developments and the use of Bakelite, Waverite and Nyback plastics in industry is contained in a booklet published by Bakelite Limited. Combining good electrical insulating properties with mechanical strength and resistance to corrosion the materials are particularly suitable for switchboards, panels, electrical fittings and so on, while their decorative and hard wearing qualities make them suitable for the interior panelling of rolling stock. Included in the booklet are illustrations of recent applications, switchboards, decorative panelling, electrical instruments and moulded materials.

Visco Water Coolers.—An illustrated brochure, Publication No. 514 of the Visco Engineering Co. Ltd., of Croydon, describes the different types of steel shell cooling units manufactured by the firm, and some typical applications. The purposes for which Visco coolers have been supplied include diesel engine cooling, heat exchangers, compressor cooling, refrigerator plant condensers, and spot welding machines. A short description is given of the construction and method of working.

THE SCRAP HEAP

B.R. Seek 650,000-ton Scrap Heap

British Railways are making an urgent appeal to all their 590,000 staff to recover iron and steel scrap. Every ounce, every nut, bolt, fishplate or scrap of these metals in workshops, sidings, and along the 19,000 miles of track is required if the target figure of 650,000 tons—and more—is to be reached and passed during the present year.

Nothing is too small and everyone's help is asked, as new steel for rails, locomotives, carriages and wagons cannot be obtained if the scrap is not supplied to the makers. Mr. R. Varley, late General Manager of the Mersey Railway, will co-ordinate the drive for this vital scrap material.

L.N.W.R. Crampton Locomotives

The series of coloured carriage pictures illustrating travel during the period 1845-1920, printed from oil paintings by Mr. C. Hamilton Ellis for the London Midland Region, includes a representation of the L.N.W.R. Crampton locomotive *Courier*. Although side elevational drawings of *Courier* are relatively familiar, the painting in which this engine is depicted also shows the shape of the smokebox in front, which came to light in an old drawing which was recently unearthed by British Railways.

Courier was one of three experimental express locomotives built by the L.N.W.R., Northern Division, at Crewe in 1847, incorporating features designed under Thomas Russell Crampton's patents.

The other two locomotives, *Velocipede* and *Cornwall*, were both of the Allan-Buddicom "Crewe" type, but with Crampton's giant eccentrics with the sheaves fixed to the driving-wheel bosses; *Cornwall* had an extraordinary boiler pitched below the axle of the 8 ft. 6 in. driving wheels. *Courier* was a characteristic Crampton type locomotive, with minor variations by Alexander Allan. Like the Crampton engines *London* and *Liverpool* on the L.N.W.R. Southern Division, it had Gooch link motion, the only example of this being used in a Crewe locomotive, though Crampton himself seems to have been partial to it and furthered its use in France, where he greatly influenced early locomotive practice.

In several respects the design of *Courier* was copied from that of seven Crampton rear-driver engines, differing slightly from each other in minor details, built by Tulk & Ley from 1846 onwards. They all, *Courier* included, had Crampton's curious arrangement of separate steampipes and regulators, the steampipes S-shaped and emerging from the boiler shell below the dome on each side.

In *Courier*, however, Allan used a smaller dome than that on the Tulk & Ley series, in conjunction with a semi-circular raised steam space, surmounted by a manhole cover and additional safety valve, above the firebox. The firebox was much longer at the bottom than at the crown. The driving axle at the rear supported a single large inverted laminated spring, with the buckle fixed to a casting on the boiler backplate.

Courier was small compared with *Liverpool* whose dimensions were unsurpassed for many years on the standard gauge in England, and was considerably less powerful than the Cramptons on the Eastern Railway of France. Its leading dimensions were: driving wheels, 7 ft. dia.; cyl., 16 in. by 20 in.; and working pressure, 90 lb. per sq. in. The boiler was oval in section, and contained 196 $1\frac{7}{8}$-in. tubes, which made it inconveniently crowded and necessitated extra steam space over the firebox.

It is doubtful whether *Courier* did much real work on the London & North Western. It is fair to surmise that it was allowed to take relatively light passenger trains, such as that shown in the carriage picture, but it would scarcely be suitable for the long, crowded, Parliamentary third-class train, stopping at every station. Versatility was a virtue in locomotives a century ago, as today, and the existence of *Courier* was short, though *Velocipede*, rebuilt, ran for many years, and *Cornwall*, considerably altered, is still in existence enjoying an honourable retirement.

How to Wreck a Business

In pre-Socialist days Britain had the finest cable and wireless service in the world.

In 1947 it was nationalised. Three years later the British end of it was taken out of the hands of the men who had made it the best in the world, and put under the control of the Post Office.

The result has been an illuminating demonstration of the incapacity of the State to run a business. Cable and Wireless goes down, down, down . . . .

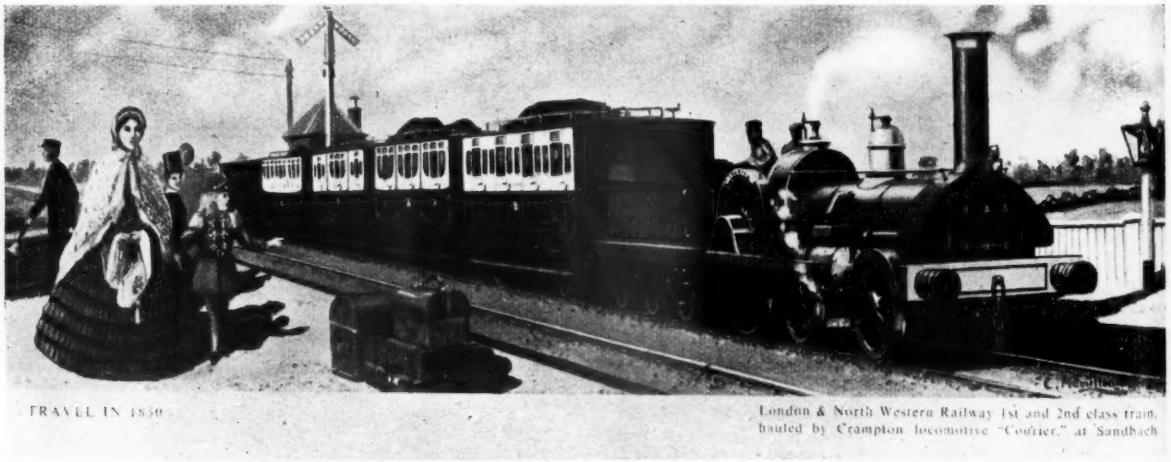
When the men who knew how to run it were in control, its American competitors operating services across the Atlantic were given such competition that they were believed to be losing money.

Why is business better for the Americans now?

Because the big City firms, the Lancashire textile companies, and the engineering industry are switching their business to them. They have had enough of State-made inefficiency . . . .

Sometimes, under the new régime, two men doing the same job in the same circuit find themselves subject to different codes of discipline, different hours of work.

One is allowed to smoke and the other is not! — *From the "Sunday Express."*



Reproduction for display in London Midland Region compartment stock of a painting by Mr. C. Hamilton Ellis of L.N.W.R. locomotive "Courier" and train

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

CANADA

C.N.R. Projects in British Columbia

The Kitimat-Terrace link for the Aluminum Company of Canada project 400 miles north of Vancouver should be completed by 1955. Import and industrial development on the north shore of Burrard Inlet, Vancouver, is being discussed. The project calls for construction by the C.N.R. of deep sea docks, and the opening up of an industrial district along the north shore waterfront in North Vancouver.

ARGENTINA

Rule Book to be Modified

A committee will be appointed to draw up a new set of rules for railway operation, as it is considered that the present code does not suit modern requirements. In the meantime, the Minister of Transport may make any modifications which he thinks fit.

New Stock for Urquiza Railway

The first of 78 new electric coaches for the Buenos Aires suburban lines of the General Urquiza Railway have been placed in service. They are of all-steel construction, weigh 28 tons and are 16 m. in length. There are large automatic central doors. Each unit has four Westinghouse motors of 65 h.p. and seats 60 passengers.

General Roca Suburban Services

The Buenos Aires suburban services of the General Roca Railway which came into force on January 14 have been modified. A number of the 140 new trains had to be cancelled as the track and platform capacity did not allow them to be run without considerable delays.

UNITED STATES

Refreshments on Trains

Service of food items and drinks from automatic machines on trains, which, as mentioned in an editorial note in our February 15 issue, is now being tried by the Pennsylvania Railroad between New York, Philadelphia, and Washington, is to be installed on all the "Rocket" diesel-operated trains of the Chicago Rock Island & Pacific.

Similar machines were first tried by the Rock Island on a suburban train between Joliet and Chicago known as the "Bankers' Special," much used by season ticket holders. During the first week of operation, hot coffee and doughnuts were provided free, and patronage was heavy; since then the permanent popularity of the facility has justified its extension to the eight "Rocket" services, involving the equipment of about 15 trains in all. The manager of the Rock Island dining car services values the automatic machines, not only as a means of revenue in themselves, but also as relieving dining car crews from the service of light refreshments and enabling them to devote their attention entirely to meal service.

"Western Star"

The Great Northern Railway is seeking authority from the Montana Board of Railway Commissioners to re-route, by way of Great Falls, Montana, its "Western Star" streamline train, jointly operated by the Burlington and Great Northern Railways from Chicago to Seattle. Great Falls, a town of 40,000 inhabitants which never previously has had through transcontinental service, is on a loop from Havre to Shelby, two points on the main line 105 miles apart, but the loop increases the distance to 222 miles.

There are two daily departures of diesel streamline trains from Chicago to Seattle by the Great Northern route, the 45-hr. "Empire Builder," with an express connection from Havre to Great Falls, and the "Western Star," making more numerous intermediate stops, which carries a through Chicago-Great Falls sleeping car, detached and attached at Havre. The diversion will also greatly improve the service to and from Helena, Butte, and other important mining towns in this area. It is proposed to accelerate the "Western Star," in view of the 117 miles extra distance of the diversion, so that the end-to-end times between Chicago, St. Paul, and Seattle remain unaltered.

WESTERN AUSTRALIA

Wagon Standardisation

The use of wagon stock of many types on the Government Railways has tended to uneconomical operation. To avoid carrying large and varied stocks of spare parts and obviate delays in repairs, the Commission's new policy is for all new wagon stock to be designed with standard underframes. The four-wheel wagon frames will be 18 ft. and the bogie frames 42 ft. over headstocks.

In addition, increased axle-load and higher tare-load ratio will be incorporated in the new design of wagons now under construction. The design provides for a maximum of 13 tons axle-load on four-wheel wagons and 13½ tons on bogie wagons.

Prototypes of the "GF" and "GH" class four-wheel wagon are on trial. The "GF" is a high-side open wagon for carrying coal and bulk wheat, and the "GH" a medium-side open wagon for mineral ores and general freight. The principal dimensions are:—

Internal dimensions :	17 ft. 9 in. long by 7 ft. 5 in. wide.
Height at sides :	"GF" 6 ft. "GH" 4 ft.
Load capacity :	"GF" 18 tons 4 cwt. "GH" 18 tons 16 cwt.
Tare :	"GF" 7 tons 15 cwt. "GH" 7 tons 3 cwt.

Each class has timber sides and mild steel plate floor. Instead of the standard Government Railway drawgear and coupler the new wagons will have the N.C.D.A. drawgear and coupler, which allows for articulation in the vertical and horizontal planes. The new couplers allow a drawbar pull of 54,000 lb. Instead of door chains and cotterpins, chainless door cotters are being fitted.

Disc wheels on axles with 10 in. × 5 in. journals are provided, with axle-box lubrication by oiled wool waste. The wheels are fitted with clasp brakes. The brake gear is compensated throughout; brake pull-rods have palm ends, allowing rapid adjustment of brake rigging to take up brake block wear.

Fifty of the "GF" class will be fitted with roller bearings and confined to a shuttle service between the Collie coalfields and the new South Fremantle power station, and for use on rotary tipplers. All wagons are provided with side doors and end doors, suitable for rotary side, or end tippler discharge.

IRELAND

Londonderry & Lough Swilly Railway

The last two remaining rail sections of the Londonderry & Lough Swilly Railway are to be closed, subject to approval of the Dublin and Belfast Governments and the company's ferry service on Lough Swilly is also to be discontinued. This was announced at the annual meeting held in Londonderry on February 28.

The Chairman said that the company's road services were by far the most important section of the company's business. Alternative lorry services would be provided when the last rail services were discontinued. For the first time, gross receipts (£254,732) reached the quarter million mark, but the increase of £20,226 was neutralised by increased expenditure, which rose by £21,071 to £243,706. The net income was £11,026 against £11,871 in 1950. Rail services showed a net loss of £6,266. After payment of 5 per cent. dividend, less income tax, the credit balance carried forward was £7,958 (£6,397).

There are now only 30 miles of line open (Londonderry-Buncrana, 12 miles); and Londonderry-Letterkenny (18 miles).

Sligo Leitrim & N.C. Railway

At the annual meeting of the Sligo Leitrim & Northern Counties Railway the Chairman said that it was obvious that if the railway was to continue operating, it would have to receive immediate financial assistance from both the Northern and Southern Governments. Mr. R. Gatty, London, a director, proposed and it was agreed that a meeting of shareholders be held as soon as possible to consider the advisability of winding up the company.

The Chairman announced that there had been a loss of £4,844 on the year's working, compared with a loss of £4,101 in 1950. A grant-in-aid from the Northern Government and other receipts reduced this to a net loss of £2,780 against £2,022 in 1950. The debit balance had increased by £5,730 to £45,955. Receipts were £51,031 against £49,063 in 1950, but expenditure increased by £1,543.

Apprentices Claim Rates Parity

A group of engineering and other unions acting on behalf of 172 apprentices employed by the G.N.R.(I.) at Dundalk appeared before the Labour Court to support a claim for parity of rates between apprentices employed in Dundalk and Dublin.

The G.N.R.(I.) agreed last June that provided the necessary financial assistance was given by the two Governments, it would be able to pay the full appropriate C.I.E. rates to all shop grades employed in Dublin, and special provision would require to be made for a suitable differential below the C.I.E. Dublin rates for the G.N.R.(I.) shop grades at Dundalk and other outside depots.

ITALY

New Station at Padua

The first wing of the new central station building at Padua was officially inaugurated in the presence of the Italian Minister of Transport on January 27. The building replaces one destroyed during the war. Padua, on the Venice-Milan main line, 37 miles west of Venice, is one of the busiest passenger and goods station in the north-east.

FRANCE

Passenger Services in 1951

During 1951, the S.N.C.F. operated approximately 153,000,000 passenger train km. (46 per cent. were steam-hauled trains; 22 per cent., electric trains; and 32 per cent. diesel railcars). The comparative figures for 1938 were 261,000,000 passenger train km. (71 per cent., steam trains; 12 per cent., electric trains, and 17 per cent. diesel railcars.

There was an increase of approximately 26 per cent. in passenger traffic in comparison with 1938, and this took place whilst passenger train km. were decreasing by 41 per cent. This result has meant more heavily loaded trains, the average number of passengers per train having risen from 84 in 1938 to 181 in 1951.

The other particularly interesting feature of passenger travel during 1951 was the considerable increase in the importance of railcars. Plans are in hand to increase this traffic still more in 1952.

Level Crossing Tests

The Minister of Public Works recently stated that a system of light and sound signals has been planned for level crossings. According to the Press, the object of the scheme is to decrease accidents, not by abolishing level crossings, at great expense, but by dispensing with gates and gatekeepers, thus effecting substantial economies. There are 32,000 level crossings on the S.N.C.F.; 22,000 have keepers and 10,000, in remote, hilly districts where accidents are rare, have none.

A trial of the new system will be made at 100 crossings. Signal posts placed one on each side of the road where it crosses the rails are to show red lights when the locomotive of an approaching train is 700 m. from the crossing and at the same time a warning bell will ring. If the tests prove satisfactory other level crossings will be equipped in the same way.

Paris Metro Articulated Train

A Paris Metro train, made up of new articulated lightweight cars, is running between Saint-Lazare and the Porte de Saint Ouen. Three lightweight bodies, mounted on four bogies, form one unit; two such units automatically coupled form a train 73 m. long. The unit, which has a capacity of 700 passengers, weighs 108 *tonnes*, against 140 *tonnes* for the existing five-car trains.

There is increased seating accommodation in the new cars. The seats, arranged on each side of a central passage, are upholstered. Standing space is left at each end of the car. Lighting is fluorescent. There are three wide double sliding doors on each side of the cars, which close automatically. The cars are all second class, instead of the usual one first and four second class.

AUSTRIA

Progress on the Semmering Tunnel

On December 8 last, 27 months after the work was begun, the new single-track Semmering tunnel was completed. Work is now proceeding on the reconstruction of the existing double-track tunnel which is being converted into a single-track tunnel with new waterproof lining. The completion of these works and the restoration of double-track working is to be marked by a ceremony which will also commemorate the 150th anniversary of the birth of Carl Ritter von Ghega, the engineer who promoted the Semmering line, the first adhesion railway across the Alps.

DENMARK

New Layout at Vigerslev Junction

At Vigerslev, a western suburb of Copenhagen, where the lines to the two main goods stations branch from the two main line tracks to Copenhagen Central, the flat junction has been replaced by flyovers, involving considerable bridging and earthworks of considerable size.

The old layout had serious drawbacks. Freight trains from the west to one of the two goods stations frequently were stopped by signal on the up main main line, blocking up traffic; and down freight trains from the principal Copenhagen goods station crossed the main line on the level crossing.

A serious collision took place in November, 1919, with the old layout, when an express ran into a standing passenger train with heavy loss of life as the result of the signalman having disconnected the block connection so as to bring a down special conveying firefighting equipment from the down slow to the down fast line to overtake the passenger train; this was done as interlocking at that time would not otherwise have permitted the desired signal movements.

The new works at Vigerslev necessitated 140,000 cu. m. of earthwork and building of three single-track bridges, one double-track bridge, and widening of three others.

Alteration of the layout began during the war, but was stopped by lack of materials. Plans had to be modified in the light of the decision, in 1946, to electrify from Copenhagen to Glostrup, with the additional tracks. The eastbound tracks were taken into use on November 27, 1951, and the westbound tracks will be inaugurated in a few months.

New Jutland-Sealand Connection

With the introduction of the summer timetable on May 15 a new fast connection will be provided between Copenhagen and Northern Jutland. Three companies are involved in this service, the State Railways, the private railway from Hillerod to Hundested, and the private ferry, which connects Hundested with Grenaa in Jutland. Their services have been co-ordinated to enable the journey time between Copenhagen and Aalborg to be reduced to 8 hr. 16 min. one way and 8 hr. 22 min. the other. This is faster than by the express trains *via* Fredericia or *via* the Kalundborg-Aarhus ferry, but not as fast as the Lyntog service, which covers the distance (*via* Fredericia) in about 6 hr. 20 min. The new service will leave Aalborg at 9.25 a.m. and reach Copenhagen at 5.41 p.m., and in the return direction leave Copenhagen at 6.18 a.m. and reach Aalborg at 2.40 p.m.

Between Copenhagen and Hillerod the service will use existing State Railway trains, which will convey through coaches to Hundested. On the Jutland side the service will be maintained by diesel trains. For the through journey there will be certain reductions in the fares.

SWITZERLAND

Doubling on Zurich-Buchs Line

The doubling of the Unterterzen-Murg section of the Zurich-Buchs line has been recently approved. The section is 2½ miles long, and about halfway between Ziegelbrücke, 36 miles from Zurich, and Sargans, 57 miles from Zurich, where the line divides for Buchs and the Arlberg route, and Chur.

Suburban Train Services in Business Hours—1

Some suggestions for improving this traffic on steam and electrified lines, with special reference to the London area

(*By a Correspondent*)

IN addition to low fares, clean stock, and a comfortable seat, the suburban business traveller appreciates a fast, frequent and regular train service. The most elementary form of suburban train service, and the simplest to operate, is that known in some quarters as the "tramway" service, in which trains stop at all stations, with one or more out-of-town termini.

This type of service is able to absorb the maximum line capacity, as the frequency is limited only by the capacity of the terminals and the signalling, the latter modified by the time occupied in stopping at stations. This service, moreover, has the merit of covering journeys from any one station to any other without change, and a proportion of such trains is thus desirable where there is an existing or potential station-to-station traffic of any size.

London Suburban Journeys

In London, however, suburban journeys are up to 30 miles or more in length, and an all-stations service even up to half that distance is tedious and occupies too much of the leisure time of the traveller, particularly if he must seek his livelihood in town and must, or prefers to, live in the suburbs. A daily journey of half-an-hour each way by an all-stations train is long enough. The extension of the Bakerloo underground services to Watford, with 22 stations and occupying 50 min. between the West End and Watford, is an example of how not to plan London transport. Watford residents have a fortunate salvation in this connection in the availability of fast steam trains running to and from Euston.

When only one up and one down track are available, any departure from the "tramway" service inevitably reduces the line capacity, and if the maximum capacity is required to move the traffic, there are no inexpensive ways of providing a faster service. This is the basic problem in any attempt to speed up the Underground services for passengers who live near the extremity of the lines. Missing an odd station by alternative trains does not help, because the uneven running time between individual points must have its reaction on frequency, and hence at the same time on line capacity.

Alternatives

Should a line (of one up and one down track) not require its maximum capacity, there is a variety of services that can be given.

One such service is that which has been developed in a haphazard way, comprising a miscellaneous assortment of trains, fast and slow, interspersed in an irregular fashion. Such a service may have been built up in the course of years and modified from time to time as the interests of one station or another become clamant. These piecemeal changes are not usually sources of satisfaction to the majority of passengers using the line.

Another possibility is to operate a sequence of trains so that fast services are available to all but the inner-suburban stations.

Alternative forms of service to give this result are illustrated in Fig. 1 and Fig. 1 (a), in which each group of stations ABD, CDE, and EFG may contain varying numbers of stations according to the traffic characteristics and the availability of points at which trains can be reversed.

As far as possible, each group of stations should serve the same total number of passengers so that the three trains in each sequence may be evenly loaded; otherwise the capacity of one train may be under-used while another may be grossly overdone. This is an experience known to many London travellers, who, although able to choose from a number of trains, have available only a small number of "good" trains which attract an undue proportion of patronage.

Apart from the stations which represent the last of one group and the first of the next, and at which intermediate passengers change from one train to the next, all stations are served by a regular service of trains of exactly the same characteristics as regards stopping places and journey time, so that none of the available trains is more attractive than another.

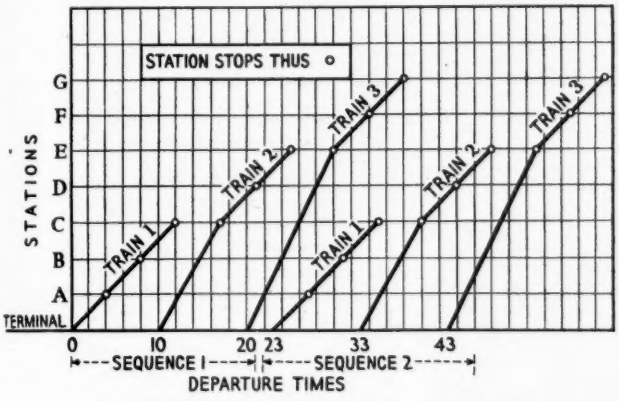


Fig. 1—Three-train sequence where only one track is available in each direction

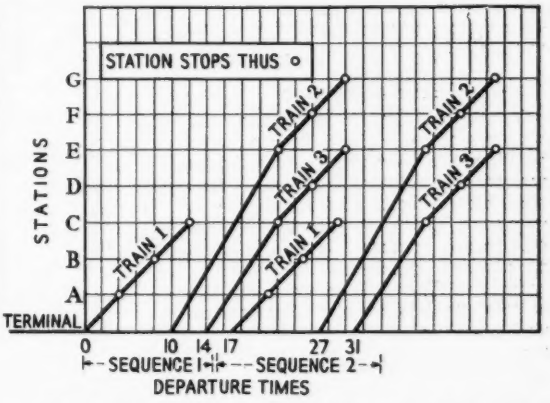


Fig. 1 (a)—A modification of Fig. 1, giving greater line capacity, but lengthening waiting time at transfer points C and E

Such a service is based on the assumption that the interval between the beginning of one sequence of trains and the next is selected so that the total number of trains in that interval (in this case three) is adequate to carry, without overcrowding, the total number of passengers requiring transport in that time.

Minimum Time at Exchange Points

The sequence shown in Fig. 1 is planned so that there is the minimum of time at the exchange points between the arrival of one train and the departure of the next—the one which carries intermediate passengers forward. On the other hand the sequence of slow, semi-fast, and fast trains reduces the frequency owing to the intervals necessary between trains 1 and 2, and between trains 2 and 3.

In sequence Fig. 1 (a) the cycle of slow, fast, and semi-fast trains makes possible an improved frequency, but the intervals at the exchange points C and

E are wider and thus protract the journey of intermediate passengers travelling, say, from B to D, or from D to G. In both sequences the interval at the terminal between train 3 and train 1 in the next sequence is at the minimum that the signalling will allow.

Volume of Intermediate Traffic

Both these arrangements assume that the volume of intermediate traffic is small in relation to that from the terminals, and that the intermediate service may be sacrificed to a great extent in favour of terminal passengers. Where the interests of intermediate passengers cannot be so sacrificed on account of numbers or for other reasons a different sequence of trains becomes necessary in order to provide a through service for them. A possible sequence is shown in Fig. 2.

This is much the same sequence as Fig. 1 except that train 1 (the stopping service) is extended all the way. Beyond point C, train 1 runs almost solely for the benefit of intermediate passengers, as all stations, D and beyond, have a more attractive fast service from the terminal.

Use of Extra Line

The diagrams mentioned so far relate to lines with only one up and one down track available for suburban passenger services. Much more is possible where extra lines are available for the whole or part of the route, because for line occupation purposes fast and slow trains may be considered independently, except that there will be some conflicting movements when the lines are laid out on the up-up-down-down arrangement and an avoiding line is not provided.

The frequency of all-stations trains on the slow lines is determined solely by signalling and terminal capacity, and line occupation is not sterilised by fast trains catching up with slow. The main line, similarly, benefits from the absence of all-stations services, so that fast trains may follow each other in quicker succession.

More Frequent Service

With an extra line available from the terminal to point C the service illustrated in Fig. 1 could become something like that shown in Fig. 3. It will be seen that the use of an extra line for even a part of the journey makes possible an appreciably more frequent service.

In Fig. 1, a hypothetical interval of 10 min. was allowed between trains 1 and 2 to allow train 1 to get clear of the platform at its terminus C, whereas in Fig. 3 train 2 is booked on an independent line to give the minimum margin required for connecting purposes at C.

Again, in the first of the diagrams mentioned, train 1 must await the departure of train 3 of the previous sequence, but with two lines available as far as C, trains may overlap up to that point. The sequences may be compared thus:—

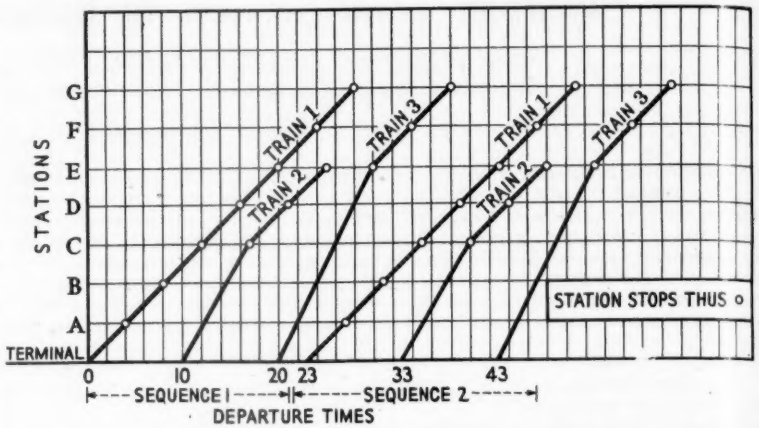


Fig. 2—Same sequence as in Fig. 1 except that train 1 is extended to give through service to intermediate passengers

DEPARTURES FROM TERMINAL

Train	Description	Fig. 1 (one down line throughout) Sequence First	Fig. 1 (one down line throughout) Sequence Second	Fig. 3 (two down lines as far as station C) Sequence First	Fig. 3 (two down lines as far as station C) Sequence Second
1	All-stations	0	23	0	14
2	Semi-fast ...	10	33	2	16
3	Fast ...	20	43	6	20

The interval of the sequence and hence of the service to any station has thus been improved from 23 to 14 min. If required the local service to stations in group A-C could be doubled if terminal facilities allow without interfering with the general structure of the timetable. Where circumstances permit, it is desirable that the cycle interval should cover an even fraction of an hour, *i.e.* 10, 15, or 20 min.

It is realised that these examples take no account of main-line passenger services. With the extension of regular interval departures (a feature encouraged by the Railway Executive) and a reliable standard of punctuality there is no reason why they should not take their place in a regular cycle of trains.

Regular Interval Services

Another encouraging feature is the extension of regular interval suburban services, confined on some lines to the non-business hours, but regular departures are equally desirable during business hours, although for different reasons. One is the ease of operation when one series of trains follows an identical series; everything should go with a swing. Another is the equalisation in train loading and train forma-

(*Continued on page* 269)

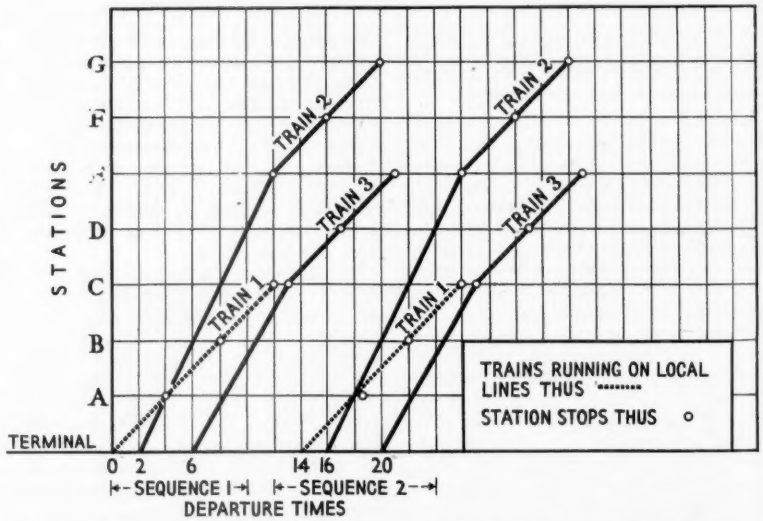


Fig. 3—Improvement in frequency by availability of second track for part of route

Multiple-Aspect Speed Signalling, Netherlands Railways

A system incorporating some special features not hitherto used and now being applied in new work

UNTIL a few years before the recent war the Netherlands Railways had made no use of colour-light signals, but had put into service from 1926 onwards a number of sections of battery-operated automatic signals of motor-driven semaphore type, controlled by track circuiting. The aspects displayed by these semaphores did not vary from those which had been standard for some time in the Netherlands, and which were the result of an interesting course of development in which the two largest of the original railway systems, that of the Holland Railway Company and that operated by another company on behalf of the State, had played the principal parts.

Semaphores were used to control running movements and the "clear" position of both stop and distant arms was 45 deg. in the upper right-hand quadrant. A stop signal arm stood horizontal for danger and a distant arm was inclined downwards at 45 deg. for "caution." White lights were used to denote "clear," and green "caution," with red for "stop," until July 16, 1934, when the spectacle glasses in all signals throughout the Netherlands were changed in one day, to give green for "clear" and yellow for "caution." Various types of shunting and point indicating signal were also in use.

As is usual on the Continent, the distant signal worked in conjunction with the home signal only, and at important stations a second, or inner, distant, acting in conjunction with the starting signal, was provided to indicate when a clear run through was possible.

Uniform Indications Introduced

At junctions, bracket type signals similar to those seen in Britain but having fish-tailed arms, were used, although in earlier years other arrangements were met with on the State system, but after the formation of a combined Netherlands Railways management in 1917 a general uniform system of running signal indications was brought into service. When necessary, the distant signals in rear of junctions were provided with an additional arm and arranged to display three aspects, so as to show whether the direct or diverging route was to be taken by the train.

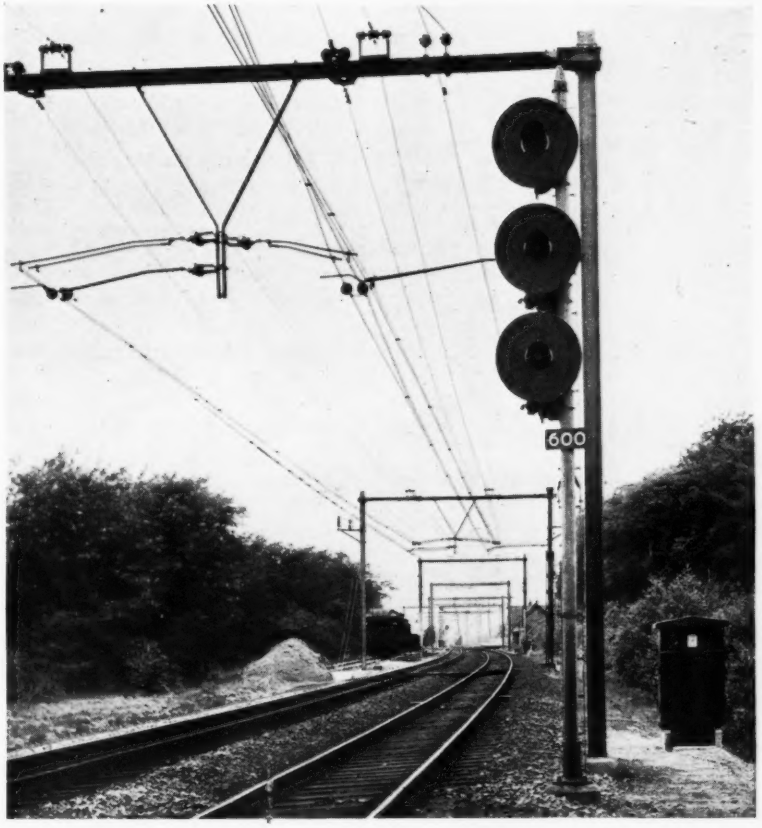
When the colour-light signal was introduced, at first in connection with certain electrified sections, no change was made in the aspects. The new signals merely exhibited throughout the 24 hours those previously given by the semaphores at night.

This signal system gave excellent results and was simple and easy to understand. The number of train accidents was extremely small and the resultant casualties practically negligible. In the three years prior to the war no passenger was killed in a train accident. The war caused considerable damage to this well-constructed equipment. The installations at some 80 stations, including 13 large ones, and block posts, were totally destroyed or very seriously damaged, while 420 others were more or less seriously affected, a total of about 80 per cent. Over 1,242 route-miles of lock-and-block and automatic signalling were in great part destroyed or removed by the enemy, and all the level-crossing warning signal installations. Great damage also was done to the telecommunications apparatus and circuits, but by intensive efforts the working was restored over a great part of the system with remarkable dispatch.

However desirable it may appear to introduce a new and more logical system of signal aspects on a railway, many practical difficulties stand in the way, apart from any economic considerations, which clearly cannot be ignored. It is possible to elaborate in theory a perfect arrangement of aspects, more particularly if no regard is paid to those already in use, but it is impossible in practice not to take those into account, because there is no possibility of changing the whole of the aspects on a railway at one stroke.

Even changing the spectacle glasses in every signal simultaneously, as was done in the Netherlands, requires special facilities and organisation, and in most cases would not prove practicable. There is also the question of safety, and as an entirely new system can only be introduced here and there, as opportunity and funds offer, it must be so arranged that there is no possibility of a dangerous confusion between old and new leading to a signal being misinterpreted, especially in a less restrictive sense.

These difficulties are the more serious on the fully signalled and densely trafficked railways of England, Holland, Germany, Belgium, and so on, than on routes where there has hitherto been comparatively little signalling, as was the case in certain parts



Three-speed multiple-aspect home signal at approach to a station, Netherlands Railways; trains run right-handed

Two-unit signal at ground level, for medium (45 m.p.h.) and low (28 m.p.h.) speed, in station area

of America, and this has accounted in part for the slower development in this respect in those countries and the caution necessarily exercised in producing and adopting new types of aspects.

There have been occasions when the conditions created by hostilities have favoured the introduction of new signalling methods, as in Belgium after 1918, when the three-position semaphore was adopted on a large scale. In the Netherlands, after the recent war, much new work was necessary in any case. The gradual spread of the overhead type of electrification, already begun before the war, made it desirable to adopt light signals for new work and to extend the use of automatic track circuit signalling. The question then arose whether it would be practicable to bring into service an entirely new set of signal aspects, better adapted to the handling of the fast electric and diesel railcar services and offering greater simplicity in the operation of station and junction layouts.

With this object in view Mr. J. H. Verstegen, Chief Signal Engineer, Netherlands Railways, after careful consideration of the various systems of colour-light signal aspects in use in other countries, devised the system, the principles of which are described in this article, brought into use at s'Hertogenbosch Station in September, 1950, as illustrated in our issue of March 2, 1951. (The ordinary three-aspect—red, yellow, green²—system of indications for automatic signalling had been put into service between Utrecht and Driebergen some time previously, with the new speed aspects at the stations.)

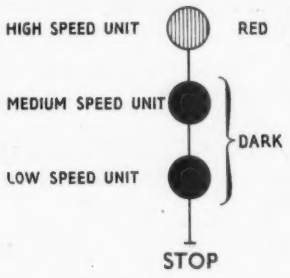


Fig. 1—Stop indication

Principles of the New System

The new system is a speed signalling system, in contradistinction to the former, using bracket type junction indications showing the route to be taken, in the manner well-known in Britain. In this system Mr. Verstegen followed a principle already at work in several Continental countries and long common on many American lines. In designing the new aspects he endeavoured to give one meaning only to each of the three fundamental indications of red, yellow, and green, when shown singly, and to achieve two other principal objects, namely, to have the stop indication always given by one red light and eliminate red altogether from proceed indications, while in no case having two different colours, such as yellow and green, appearing at the same time.

The system distinguishes between what are called high signals, mounted on posts or on the traction standards, and low or ground signals. The latter apply to movements inside station areas, and the high signals to movements outside them, or at the entrance to such areas. In the case, for example, of a section of automatic signalling, high signals showing red, yellow, and green are used, but where it becomes necessary to place signals at less than full braking distance apart, the signal immediately in rear of red shows a yellow flashing light, giving 75 flashes a minute, and the one preceding that shows single yellow.

Single yellow is always seen at a point at least full braking distance from the red which it announces. The searchlight type of signal is used, with up to three indications appearing through the one lens. In the case of ground signals showing *one* light only, the green indication prescribes not more than low speed within station limits, after leaving which the restriction no longer applies, while yellow indicates that the next signal is at danger, or the next but one with flashing yellow between. These special features enabled the system to be introduced without giving rise to any confusion between it and the older signalling in the minds of drivers and motormen, who have experienced no difficulty in understanding it.

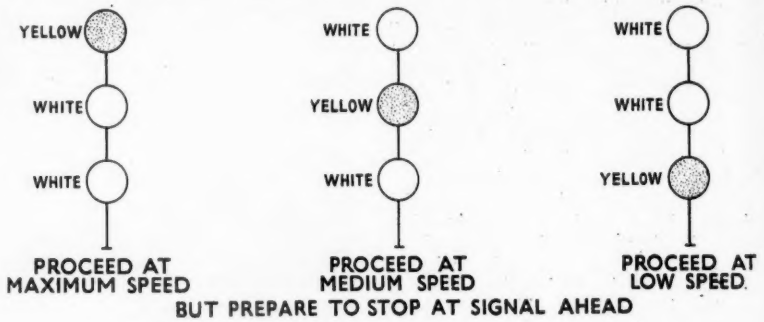


Fig. 2—Caution indicators

The three fundamental speeds admitted are:—high, or maximum, 125 km.p.h. (78 m.p.h.); medium, 90 km.p.h.

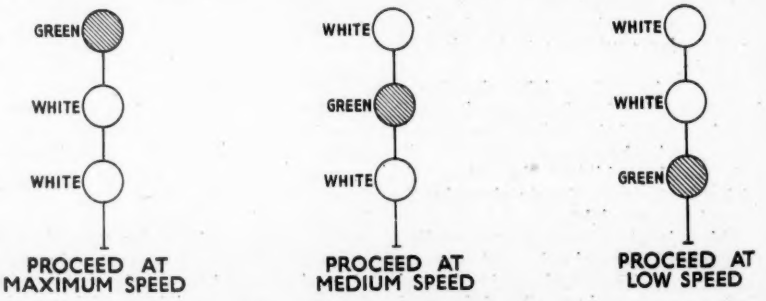


Fig. 3—Proceed indications

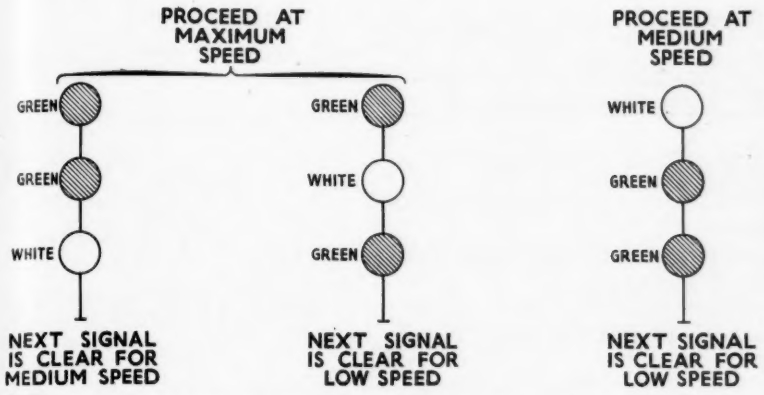


Fig. 4—Proceed indications when signal ahead imposes a lower speed

(56 m.p.h.); and low, 45 km.p.h. (28 m.p.h.). (A lower speed than 28 m.p.h. is imposed by a calling-on aspect, a single yellow light flashing at 180 a minute.)

A complete high signal carries three signal units, as seen in the American speed signalling systems, reading downwards, high, medium, and low speed. The red stop aspect, however, can be shown from any one of the three units, but as a rule appears in the top unit; the other two then show no light, as shown in Fig. 1.

If the train may proceed, but the next signal in advance is at danger and is at least full braking distance ahead for the speed in question at the moment, a single yellow light appears at the appropriate height on the post, as seen in Fig. 2. As the driver would not be able to tell at night from which of the three units the yellow light was being shown, the other two units are made to exhibit lunar white, as " markers " to indicate the correct position of the coloured one. These white lights have no actual signalling significance in themselves. If the next signal is not against the train two cases fall to be considered, namely, when the speed authorised by such signal is at least as high as that allowed by the signal the driver is observing, or when it is less.

Possible Combinations of Lights

In the former case a single green light appears at the appropriate height, as shown in Fig. 3, the other units again " marking " its position. On seeing such an aspect therefore the driver knows that he will be able to pass the next signal at not less than the speed authorised by it, short of some emergency arising, which may happen with any signalling system. If, on the other hand, the signal ahead is " off " for the train, but authorises a *lower* speed than that permitted by the one in rear of it, such lower speed is indicated to the driver by an additional green light at the corresponding position, as shown in Fig. 4, with lunar white in whatever

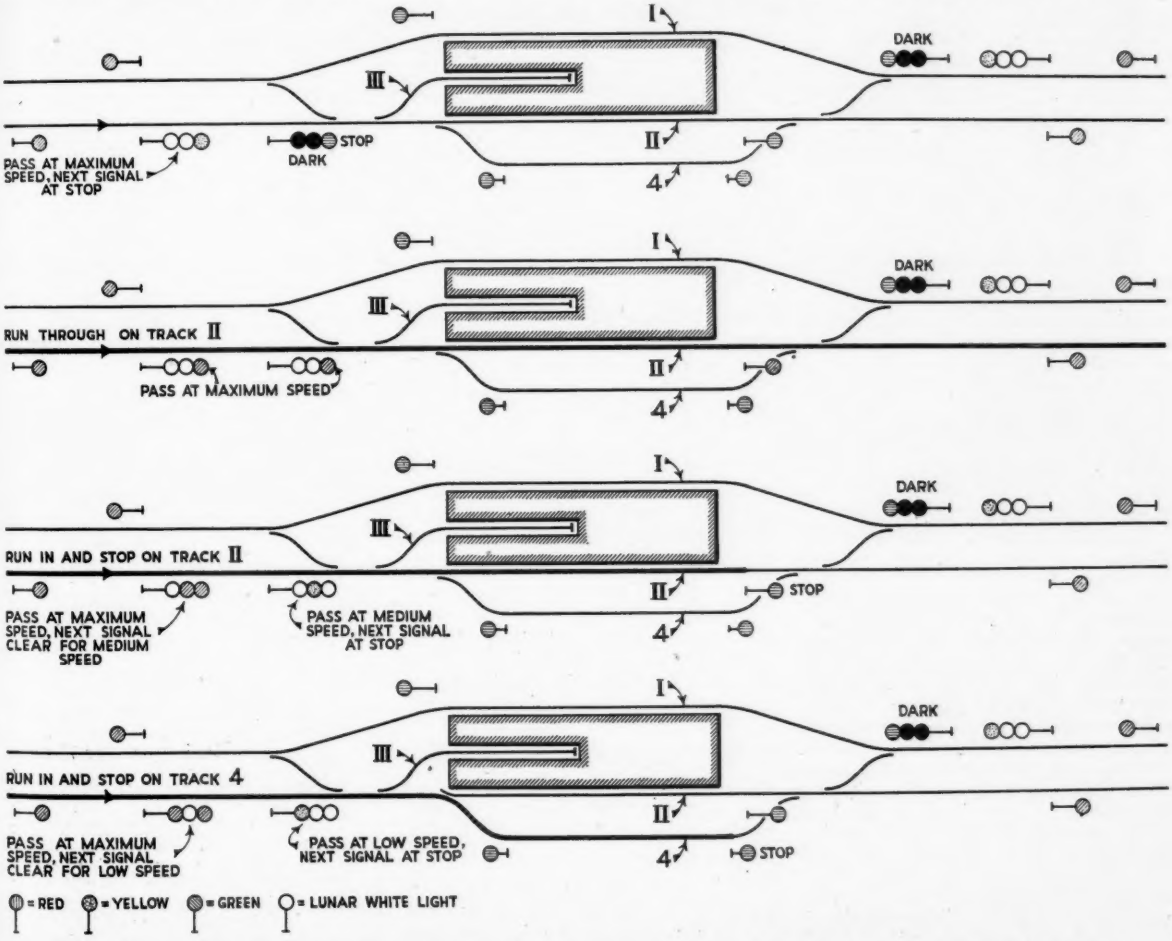


Fig. 5 (a)—Diagram showing application to typical station layout of new Netherlands speed signalling indications

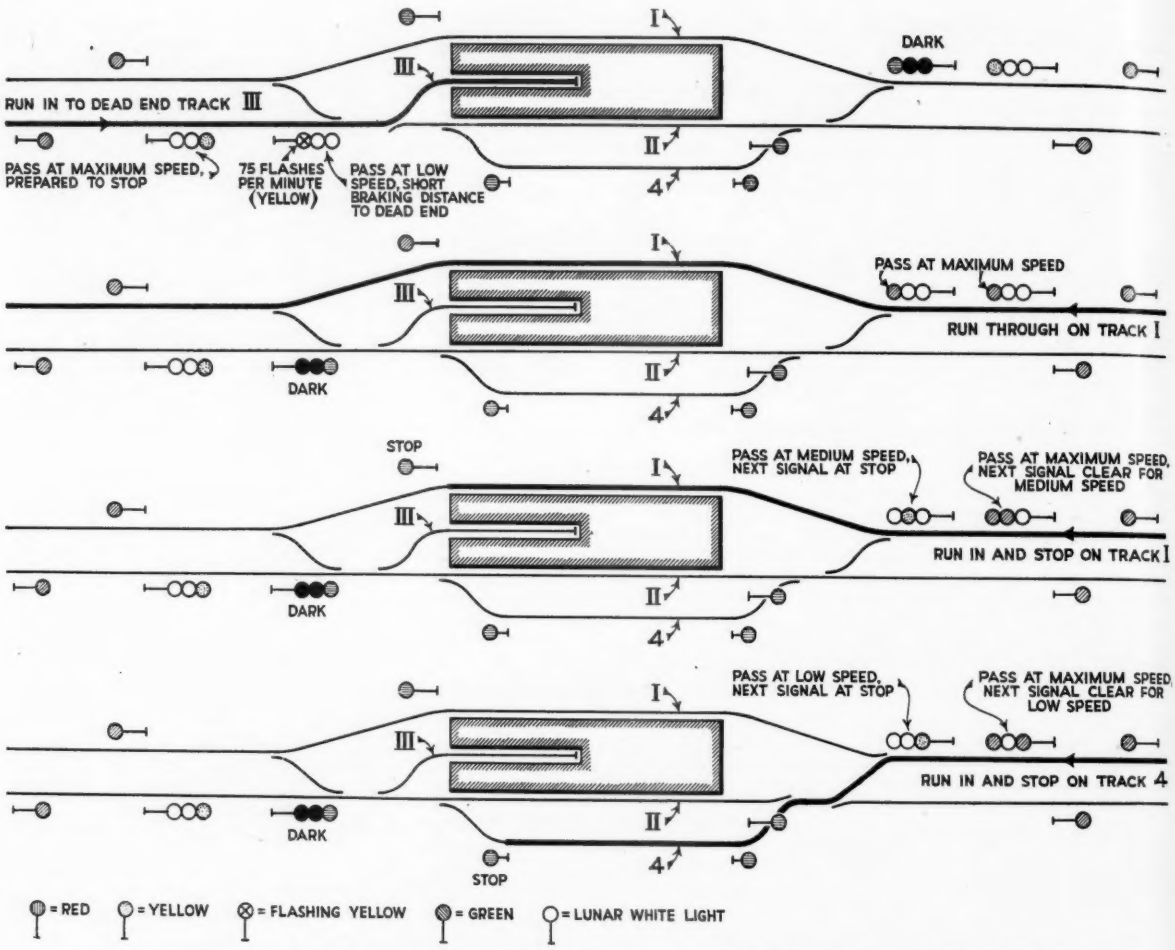

RUN IN TO DEAD END TRACK III
PASS AT MAXIMUM SPEED, PREPARED TO STOP
75 FLASHES PER MINUTE (YELLOW)
PASS AT LOW SPEED, SHORT BRAKING DISTANCE TO DEAD END
DARK
PASS AT MAXIMUM SPEED
RUN THROUGH ON TRACK I
STOP
PASS AT MEDIUM SPEED, NEXT SIGNAL AT STOP
PASS AT MAXIMUM SPEED, NEXT SIGNAL CLEAR FOR MEDIUM SPEED
RUN IN AND STOP ON TRACK I
PASS AT LOW SPEED, NEXT SIGNAL AT STOP
PASS AT MAXIMUM SPEED, NEXT SIGNAL CLEAR FOR LOW SPEED
RUN IN AND STOP ON TRACK 4
= RED
= YELLOW
= FLASHING YELLOW
= GREEN
= LUNAR WHITE LIGHT

Fig. 5 (b)—Diagram showing application to typical station layout of new Netherlands speed signalling indications

third unit is not at that instant in use, as a "marker." There are thus three possible combinations of these two green lights. It will be noted that yellow never appears unless there is a red aspect in advance, and that all full proceed aspects, even when the next signal in advance imposes a reduction of speed in the next section, are composed of green lights only.

It is to be noted also that single yellow invariably appears at full braking distance from the red which it announces, according to the speed authorised by the height of the yellow aspect, and if another signal intervenes, this has a yellow flashing light to emphasise that it is at less than such distance from the red. The accompanying illustration shows one of these three unit signals at s'Hertogenbosch Station.

In this case the medium speed is set at 75 km.p.h., or practically 45 m.p.h., and is marked on the signal background plate and covered by a local running instruction. The second illustration shows the two-unit type of signal used at certain locations within station limits, which does not give a high speed signal. (This station is equipped with "NX" route-relay interlocking apparatus.) Fig. 5 (*a*) and (*b*) shows the application of this system of speed signalling to the various train movements at a typical through station.

Should a unit fail in a 3-unit high-type signal, the fact that only two lights are showing at once reveals the defect to a driver, who must proceed cautiously accordingly. Moreover, in any case where an incorrect or imperfectly shown aspect could lead to dangerous misinterpretation a more restrictive aspect is caused to show automatically.

For example, if single yellow fails it becomes lunar white, leaving three white lights showing. A failure of green results in yellow being given. The failure of a 75 per min. flashing yellow increases the rate of flashing to 180 per min. and any failure of that causes red to appear. Entrance to an occupied line, as mentioned above, is authorised by a "calling-on" aspect, one yellow light flashed at 180 flashes a minute; special movements, such as wrong-line movements, can be covered by this aspect.

This interesting signal system is reported to be giving every satisfaction and is being extended to other places where new installations are having to be provided, as at Blauwkapel, Arnhem, Leiden, and Eindhoven. It is already in use for automatic signalling between and through stations over some 150 miles of double track as follows:—Utrecht-Arnhem, Amsterdam-Nieuwersluis (Utrecht line), Amsterdam-Haarlem, The Hague-Voorschoten, and during the next three years will be extended to cover double this mileage.

IRON FOUNDRY OUTPUT IN 1951.—The output of ironcastings in 1951 was 3,754,527 tons compared with 3,486,892 tons in 1950.

MONT BLANC ROAD TUNNEL.—A road tunnel under Mont Blanc to connect France and Italy is expected to be opened to traffic in 1956. Work is due to begin towards the end of this year. For 7¼ miles the tunnel, 26 ft. wide with two carriageways, will run straight, with a slight curve at the French end to link the tunnel with the approach road from Chamonix. The French entrance will be at La Dalmaz, 1,500 m. up the mountainside above Chamonix, and the Italian end will be at Entreves, near the resort of Courmayeur. The cost is estimated at over £6,660,000, to be shared between France, Italy and Switzerland.

Industrial Locomotives for German Steelworks

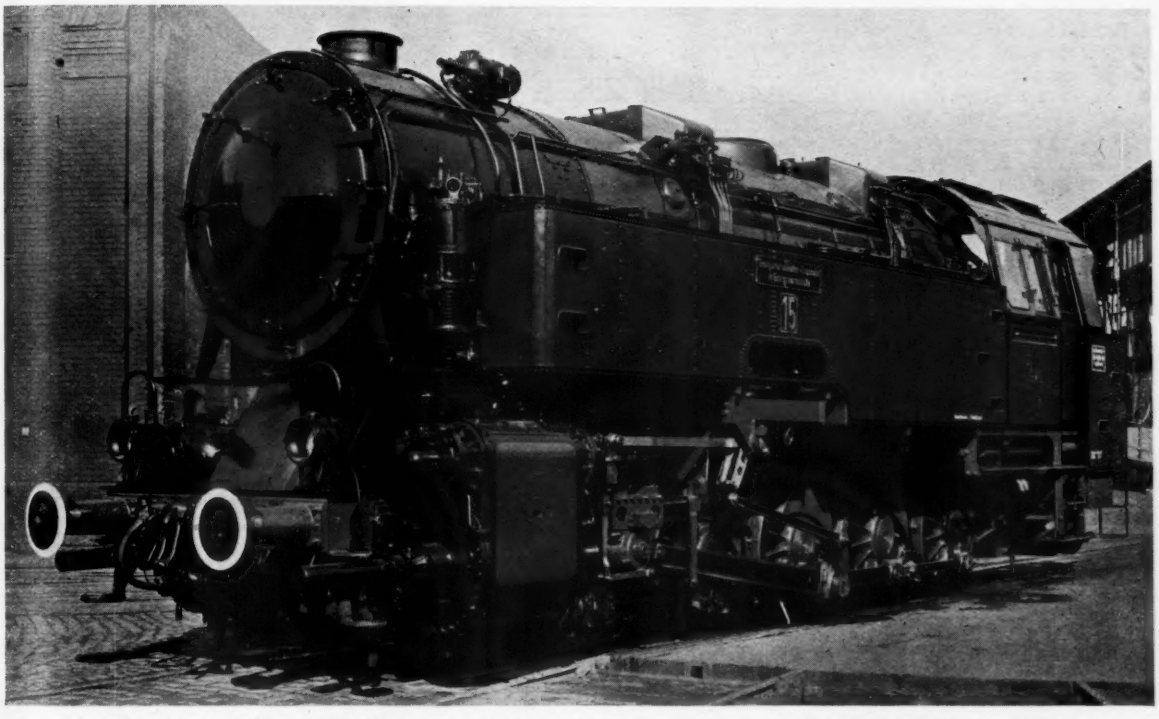
With a wheelbase of 20 ft. 4 in. this 0-10-0 tank locomotive can traverse 460 ft. curves

ONE of the largest and most powerful industrial steam locomotives ever built in Europe was set to work in 1951 on the standard-gauge lines of the Georgsmarienhütte A.G. steelworks, near Osnabruck, Germany. In addition to normal works trains and shunting services, this line also operates passenger trains for workers over a distance of two or three miles, and has a total of 15 locomotives, over 400 wagons, eight passenger coaches, and two brake vans.

Built by Henschel & Sohn A.G., Kassel, the new locomotive is of the 0-10-0 tank type, with a working order weight of 100 *tonnes*, the axle-load being almost evenly distributed in that condition. The cylinders are 27½ in. dia. by 26 in. stroke, and there is a restricted maximum cut-off, so that a factor of 0·6 in the tractive effort formula gives the nearest approximation to actual conditions. With 51½ in. wheels and a boiler pressure of 200 lb. per sq. in. the starting effort is 46,000 lb.

By the use of Beugniot trucks front and rear the locomotive can traverse curves of 460 ft. radius despite the wheelbase of 20 ft. 4 in. Piston valves above the cylinders are of the Müller type, actuated by Walschaerts valve motion, and cylinders and valves are lubricated by a Bosch mechanical lubricator. The boiler has a grate area of 38·6 sq. ft., a firebox heating surface of 158 sq. ft., and a tube-and-flue (fireside) surface of 1,665 sq. ft., giving an evaporative total of 1,823 sq. ft. Superheating surface is 697 sq. ft. Firebox and firebox stays are of copper and the tubes and flues of steel.

Water capacity is 2,300 gal. and coal capacity 3½ tons. Empty weight of the locomotive is 83 *tonnes*. The overall length is 44 ft. 7 in., the maximum height 13 ft. 9 in., and the greatest width 10 ft. 4 in. Top speed allowed in traffic is 28 m.p.h. Fittings include Knorr air brake, air sanding, and electric lighting from a 0·5 kW. turbo-generator set.



0-10-0 *tank locomotive with 20-ton axleload and 4·9 tons per foot of wheelbase weight distribution*

Suburban Train Services in Business Hours

(*Concluded from page* 264)

tion. A third is that the passenger benefits from the absence of unduly long gaps between successive trains.

From this study, a series of principles seems to emerge, capable of application to lines of widely different characteristics:—

1. All stations should be served by trains running at fairly regular intervals.

2. All trains to any station should be equally attractive.

3. None but the nearer in-town stations should suffer an exclusively or mainly all-stations service.

To achieve these objects, it is necessary:—

(*a*) To group stations in such a way that the total traffic in one group is roughly the same as in another.

(*b*) To serve each group by a different type of train.

(*c*) To include each type of train in a regular sequence of trains.

(*d*) The interval of the sequence to be such that:—

(*i*) trains are adequately loaded without overcrowding.

(*ii*) each interval should, when circumstances permit, occupy an even fraction of an hour.

(*To be continued*)

PRE-STRESSED CONCRETE CONSTRUCTION.—A discussion was held at a supplementary meeting of the Institution of Civil Engineers on February 28 on the subject of "Relative Economics of Pre-stressed Concrete Compared with other Forms of Construction — Aluminium, Reinforced Concrete, steel, and timber." Mr. John Ratter, introducing the discussion, said that pre-stressed concrete held the early promise of economy in material and maintenance.

New Steamer for Southampton—Le Havre Service

SS. "Normannia" has accommodation for 1,400 passengers, nearly three times as many as the former vessel operating on this route

ON the night of March 3-4, the new British Railways ship, ss. *Normannia,* made its maiden trip on the Southampton—Le Havre route, which is operated by the Southern Region. Launched last July by the Hon. Pamela Hurcomb, daughter of Lord Hurcomb, Chairman of the British Transport Commission, the new vessel will be the second railway ship to be so named; the original *Normannia,* which operated on the same route, was lost at Dunkerque in 1940. The ss. *Hantonia,* at present working the Le Havre service, will be retired after a career of 40 years, including service in both world wars.

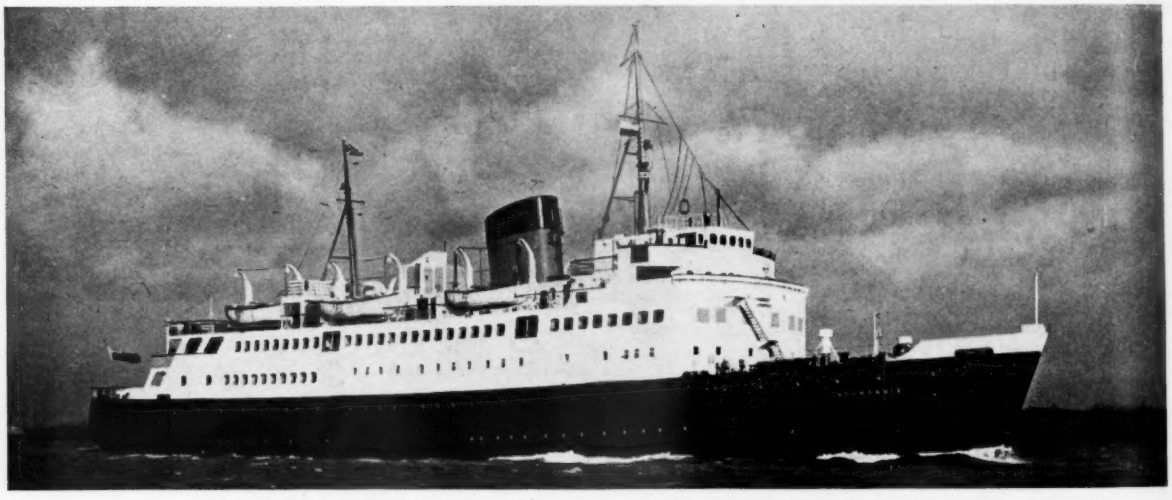
With a gross tonnage of 3,543 tons, the *Normannia,* built by William Denny & Bros. Ltd., has accommodation for 1,400 passengers, which is nearly treble that of the *Hantonia.* The new vessel has an over-all length of 309 ft., a speed of 19½ knots, and carries a crew of 71; it has one large streamlined funnel, two tripod masts, a raked stem and cruiser stern. Sleeping accommodation for 325 persons in either private cabins or lounges is provided on the upper, main, and lower decks. About twenty cars can also be carried.

A principal feature of the new vessel is the installation of a Denny-Brown ship stabiliser. The decision to fit a stabiliser follows the successful operation of similar plant now installed in a number of cross-Channel steamers, in which rolling has been almost eliminated. Radar and radio telephone are also installed and a public address system, operated from the wheelhouse and Purser's office, can make contact with all parts of the vessel. Special attention has been given to ventilation, heating, and heat and sound insulation throughout the ship.

A well-appointed and spacious smoke room with bar, for first class passengers, is arranged at the forward end of the promenade deck and extends the full width of the ship. Large windows at the sides and forward end provide an excellent outlook. Settees, easy chairs and tub chairs are upholstered in hide with a red and beige colour scheme. The lounge for first class passengers is fitted with comfortable easy chairs on either side. These are upholstered half in green hide piped with beige, and half in rust hide piped with beige. A buffet amidships provides refreshment service.

A spacious lounge for third class passengers is situated immediately abaft the first class lounge. The furnishings generally are similar to those for the first class lounge except that the seating is arranged in units of three

(*Continued on page* 273)



British Railways new cross-Channel steamer "Normannia"

First class smoke room and bar

Restaurant

RAILWAY NEWS SECTION

PERSONAL

Mr. Sven Christophersen has been appointed Acting Chief of the Stores Department, General Roca Railway, Argentina.

Mr. R. V. G. Pennefather, M.C., A.M.I.E.(Aust.), L.S., Deputy Chief Civil Engineer, New South Wales Government Railways, who has been appointed Chief Civil Engineer, became an assistant surveyor in the railway survey branch of the Department of Public Works in 1910, qualified as a surveyor, and carried out surveys for the location of a number of proposed railway lines in various parts of the State. In 1914 he joined the Department of Railways as surveyor and carried out surveys for improvements to grades and curvature of main lines. During the first world war he was on active service abroad and served as an officer with the Anzac light railways and with the 4th Australian Pioneer Battalion. He was awarded the Military Cross, after the battle of Dernacourt, in 1918. On return from active service, Mr. Pennefather resumed duties as surveyor and was subsequently appointed Resident Engineer in charge of the electrification of several sections of the Metropolitan Railways. He also supervised the construction of the railway workshops at Chullora and Cardiff. For a number of years he was in charge of the renewal of the permanent way throughout the State and later was appointed Assistant Chief Civil Engineer in charge of the maintenance of all tracks and structures. He was appointed Deputy Chief Civil Engineer for the Railways Department in 1950.

Mr. J. M. Kendall, Assistant Chief Civil Engineer, New South Wales Government Railways, has been appointed Deputy Chief Civil Engineer.

Mr. R. V. G. Pennefather

Appointed Chief Civil Engineer, New South Wales Government Railways

Photo] [Lafaye te

The late Mr. C. R. Byrom

Chief Operating Manager, L.M.S.R., 1932-38

Sir Reginald Robins, Commissioner for Transport in East Africa, and Sir Philip Mitchell, Chairman of the East Africa High Commission, have arrived in London for discussions with the Secretary of State for the Colonies.

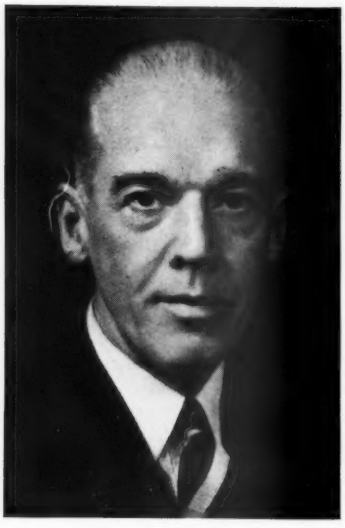
We regret to record the death on February 26, at the age of 74, of Mr. C. R. Byrom, C.V.O., O.B.E., Chief Operating Manager, L.M.S.R., 1932-38. He was educated at Shrewsbury, and entered the L.N.W.R. service in 1896. After serving in various departments he became Assistant District Traffic Superintendent, Central Wales & Swansea, in 1907, and Southern Division in 1911. In 1918 he was promoted to be Assistant Superintendent of the Line, and when amalgamation took place he became General Superintendent (Passenger Commercial), L.M.S.R. In 1924 Mr. Byrom was selected for the post of Assistant Chief General Superintendent. He became Chief General Superintendent in 1927, and was appointed Chief Operating Manager in 1932; he retired in 1938. Among the notable events in Mr. Byrom's career were the arrangements for intensive passenger traffic of the Jubilee and Coronation periods, and his inauguration in 1934 of the On Time movement. He was Chairman of the L.M.S.R. company's side in the negotiations with the L.N.E.R. and G.W.R. companies in connection with pooling. He was a Lt.-Colonel (Retired), Engineer & Railway Staff Corps, R.E. (T.A.). In Oxfordshire Mr. Byrom was a member of the Diocesan Board of Finance. The funeral was held at Stonesfield Parish Church, Oxfordshire, on February 29. The service was conducted by the Rector, the Rev. J Osborne, assisted by the Rev. W. Favell, Vicar of St. Pauls, Oxford, and the Rev. W. G. de Lara Wilson, Vicar of Acton; interment was at Freeland. In addition to family mourners, those present included:—

London Midland Region: Messrs. J. W. Watkins, Chief Regional Officer; E. Lambert, Assistant (Telegraphs & Telephones) to Operating Superintendent; H. G. N. Read, Assistant Commercial Superintendent.

Also among those present were: Messrs. S. E. Parkhouse, Chief Officer (Operating), Railway Executive; W. P. Bredbury, former Chief Commercial Manager, L.M.S.R., and London Midland Region; C. Johnstone, former Assistant Commercial Manager, L.M.S.R.; G. L. Darbyshire, former Chief Regional Officer, London Midland Region.

Mr. H. R. Garth

Assistant Civil Engineer, North Eastern Region, 1948-52



Mr. A. L. Crewe

Appointed Assistant Regional Staff Officer, Eastern Region

Mr. J. R. Johnson

Appointed District Road Motor Engineer, London, Eastern Region

Mr. H. R. Garth, A.M.I.C.E., Assistant Civil Engineer, North Eastern Region, who, as recorded in our February 29 issue, has retired, trained for four years at the City of Bradford Technical College and was three years in the drawing office of the Tees-Side Bridge & Engineering Works Limited, and Ashmore, Benson, Pease & Co. Ltd. He joined the North Eastern Railway as a junior assistant in the Engineer's Office at York in 1908. After serving as an officer in the Royal Engineers during the first world war, he returned to York, where for some 15 years he was occupied mainly on bridge renewals, including North Seaton Viaduct and the design and building of the bridge carrying the main line over the coast road north of Newcastle. He had three years experience at the District Engineer's Office, York, and was for some years Personal Assistant to Mr. John Miller, Engineer, North Eastern Area, L.N.E.R. Mr. Garth was also closely associated with the testing of bridges by the Bridge Stress Committee of the Department of Scientific & Industrial Research, and on the recommendation of Mr. C. Gribble, Engineer, Bridge Stress Committee, took charge of a party of assistants from bridge offices of British Railways, who demonstrated Fereday-Palmer stress recorders for comparison with German, Swiss and French apparatus in Berlin and Douai. He was appointed Assistant to Engineer in 1938 and Assistant Engineer in 1945. In October, 1947, Mr. Garth became Acting Engineer, North Eastern Area and on nationalisation was appointed Assistant Civil Engineer, North Eastern Region.

Mr. L. J. Davies has resigned from the board of the Steel Company of Wales Limited.

Mr. William J. Thompson, who, as Principal of the Traffic & Public Transport Section of the Northern Ireland Ministry of Commerce, took a leading part in the inter-Government negotiations on the G.N.R.(I.) has been promoted an Assistant Secretary (Acting) to the Ministry. Mr. Thompson succeeds Mr. W. Crone, who is retiring.

Mr. A. L. Crewe, M.B.E., General Assistant to the Chief Regional Officer, Eastern Region, who, as recorded in our February 29 issue, has been appointed Assistant Regional Staff Officer, Eastern Region, began his railway career in 1911 in the Office of the Chief Goods Manager, Great Central Railway, and shortly afterwards was transferred to the General Manager's Office. He joined the R.F.C. in 1915, and some four years later resumed duty on staff work at headquarters. At the Grouping he was appointed to a position in the Managing & Salaried Staff Section of the Chief General Manager's Office of the L.N.E.R. and became Secretary of Sectional Council No. 1 in 1928. He took over the control of the Managing & Salaried Staff Section in 1932, and at the outbreak of war was given the post of Staff Assistant to the Divisional General Manager, Southern Area. For a considerable period of the war he acted as Railway Labour Supply Officer, Eastern Counties, in liaison with the Ministry of Labour, and was awarded the M.B.E. in the Birthday Honours List for 1947. On nationalisation he was made General Assistant to the Chief Regional Officer, Eastern Region. Mr. Crewe has had a long association with the Railway Convalescent Homes and since the beginning of 1951 has been Chairman of the board of Trustees.

Mr. W. J. Knowling, Works Accountant, Stratford, Eastern Region, has retired.

Mr. T. Dunne has been appointed Registrar to the board of Coras Iompair Eireann, in succession to Mr. W. J. Bolger, who has retired.

NORTH EASTERN REGION APPOINTMENTS

The North Eastern Region of British Railways has announced the following appointments:—

Mr. H. F. Jarvis, Senior Technical Assistant (Outdoor Machinery), Mechanical & Electrical Engineer's Office, Doncaster, to be Electric Traction Engineer (Tyneside Area) Gateshead.

Mr. T. Matthewson-D'ck, District Motive Power Superintendent, York, to be District Motive Power Superintendent, Newcastle-on-Tyne.

Mr. J. R. Johnson, Assistant District Road Motor Engineer, Blackburn, London Midland Region, who, as recorded in our February 29 issue, has been appointed District Road Motor Engineer, London, Eastern Region, was educated at Aldenham School. He served an apprenticeship with John I. Thornycroft & Co. Ltd., at Basingstoke and, in 1931 entered the service of the L.M.S.R. in the Road Motor Engineer's Department, London. He served in that Department in various capacities until, in 1949, he was appointed Assistant Road Motor Engineer, Blackburn.

The designation of the Divisional Marine Managers at Dover, Newhaven, Portsmouth, Southampton and Weymouth, under the control of Mr. R. P. Biddle, Docks & Marine Manager, Southampton, has been changed to District Marine Manager.

The Minister of Transport has approved the appointment of Alderman A. L. Chown, who is a representative of local authorities, to be a member of the Transport Users' Consultative Committee for the East Midland Area.

Mr. P. R. Deshayes has relinquished his posts as General Representative of the French National Railway Company in the United Kingdom and Eire, and Managing Director of French Railways Limited, to take up another appointment with the French National Railway Company abroad. He has been succeeded in both these posts by Mr. C. M. Hannoyer, of the French Railways Operating Department.

Mr. W. G. Holmes has retired after 38 years as Manager of the Southampton Branch of British Insulated Callender's Cables Limited, and the former Callender's Cable & Construction Co. Ltd. The occasion was marked by the presentation by Mr. O. W. Minshull, Manager (Home Sales), of a cheque from his colleagues in the Home Sales Organisation. Mr. Holmes is succeeded by Mr. E. Hitchen, who joined the former Callender's Cable & Construction Co. Ltd. in 1920. During the war Mr. Hitchen served as an Ordnance Officer, and in 1946 returned to the newly-

formed British Insulated Callender's Cables Limited as a sales representative in north west London.

Mr. R. P. Biddle, Docks & Marine Manager, Southampton Docks, Docks & Inland Waterways Executive, has been re-elected Chairman of the Southampton Port Employers' Association.

The London Transport Executive has announced that Mr. C. E. Cadwallader has been appointed a Principal Executive Assistant and will act as Deputy to the Estate Agent & Rating Surveyor.

Mr. T. W. D. Abell, District Marine Manager, Dover, Southern Region, British Railways, is leaving this country by air on March 20 to take up the appointment of Assistant General Manager, Canadian-Vickers Limited, Montreal.

The late Sir Henry T. Holloway, who was Chairman and a Managing Director of Holloway Bros. (London) Limited, and a Past President of the Federation of Civil Engineering Contractors, left (duty paid £28,996). £203,491.

The Metropolitan-Vickers Electrical Co. Ltd. has appointed Mr. D. J. Crowther to be Personnel Manager. Mr. A. C. Ellis has become Manager of the Cardiff Office, in succession to the late Mr. H. Coope.

Mr. J. W. Blakey, Manager of the London Office of Crosthwaite Furnaces & Scriven Machine Tools Limited, has been appointed a Director of the company. He will continue to work from London Office as Sales Director.

Mr. Joseph H. Wright has been elected a Vice-President of the Illinois Central Railroad, U.S.A., with the title of Vice-President & General Counsel. Mr. Howard H. Rath has been elected a member of the board of directors.

Annual R.O.D. Dinner

The annual reunion dinner of the Royal Engineers (Railway Operating Division) was held at the Transportation Club, S.W.1, on February 29. Colonel V. M. Barrington-Ward, Member of the Railway Executive, presided. Among the officers and guests present were:—

Messrs. V. M. Barrington-Ward, J. Clubley Armstrong, F. L. Castle, B. W. C. Cooke, C. Grasemann, B. H. Harper, F. Horler, R. Horsfield, K. Leech, J. L. M. Moore, S. E. Parkhouse, E. W. Rostern, M. D. Robinson, H. Rudgard, C. E. R. Sherrington, K. R. N. Speir, M. S. Speir, W. G. Tyrrell.

Mr. W. A. Watson, Foreign Freight Agent, Toronto, Canadian National Railways, who, as recorded in our February 29 issue, has been appointed Traffic Manager for the Foreign Freight Department, with headquarters at Montreal, was born at Orillia, Ontario and began his railway career as a junior clerk at Winnipeg, in 1911. He served at Winnipeg until 1913, when he was transferred to Edmonton as chief clerk to the District Freight Agent. From 1916 to 1919 he served overseas as a Flying Officer in the Royal Air Force and on his return in 1919 was made Freight Traffic Representative at Montreal. In 1924 he was appointed Travelling Freight Agent at Hong Kong, and subsequently served as General Agent for the railway at Singapore and Yokohama. He returned to Canada in 1929 as Assistant to the Traffic Manager, Foreign Freight Department, at Montreal. Two years later he was appointed Foreign Freight Agent at Chicago and in 1940 was transferred to Toronto in a similar capacity.

Mr. G. J. Winney, formerly of the Bombay branch of Thos. Cook & Son Ltd, has been appointed Manager of the Delhi office, in succession to Mr. R. D. Robson.

Mr. A. B. Graham, Manager of the Zenith works of Henry Wiggin & Co. Ltd. at Thornliebank, Glasgow, has been elected to the delegate board of the company.

Mr. L. C. Hawkins, Member, London Transport Executive, accompanied by Mr. George Dodson-Wells, Chief Public Relations Officer, represented London Transport at the recent celebrations held in Berlin to mark the fiftieth anniversary of that city's underground system. Reference to the celebrations was made in our February 29 issue.

The Queen, on February 27, at Buckingham Palace, conferred the honour of Knighthood upon: Mr. John Lucian Blake, M.Sc., Comptroller-General, Patent Office; Mr. Robert Furness Fryars, Chairman & Managing Director, A.C.V. Sales Limited; the Honourable John Herman Lienhop, Agent-General in London for the State of Victoria; Mr. Alexander Williamson, C.B.E., M.I.C.E., Chairman & Managing Director, William Beardmore & Co. Ltd., and Chairman of the Glasgow Railway Engineering Co. Ltd.

Mr. P. J. M. Buchanan, A.M.I.Loco.E., has been appointed Carriage & Wagon Engineer to Messrs. Livesey & Henderson, Consulting Engineers. Before taking up this appointment Mr. Buchanan was in the Rolling Stock Design Department of the English Electric Co. Ltd., at the Dick, Kerr Works, Preston, and he had previously been with the Gloucester Railway Carriage & Wagon Co. Ltd., and the Birmingham Railway Carriage & Wagon Co. Ltd He is a freeman of the City of Gloucester.

Mr. H. T. Horsfield, M.Sc.(Eng.), A.M.I.C.E., Senior Assistant, New Works Office, Civil Engineer's Department, Kings Cross, Eastern Region, who, as recorded in our February 29 issue, has been appointed Assistant District Engineer, Bradford, North Eastern Region, studied civil engineering at the Imperial College, London. He subsequently entered the service of the Surrey County Council and was engaged on the construction of bridges and by-pass roads. He joined the L.N.E.R. as an engineering graduate in 1934, and after training periods in various offices at Kings Cross and York, was engaged on the supervision of contract works, including the Edgware branch widening, the part reconstruction of New Holland pier, and the new carriage building shops at Doncaster. Recently at Kings Cross he has been concerned with pre-stressed concrete design.

We regret to record the death on March 3 of Mr. C. D. Hanna, M.I.Loco.E., Chief Draughtsman of Andrew Barclay Sons & Co. Ltd. At one time he was Assistant Chief Draughtsman in the Steam Locomotive Department of Sir W. G. Armstrong Whitworth & Co. (Engineers) Ltd. and in 1930, on the inception of that company's Diesel Traction Department, was appointed Chief Locomotive & Carriage Designer. After being connected for a short time with the Crompton-West Traction Organisation at Chelmsford, Mr. Hanna joined Andrew Barclay Sons & Co. Ltd., at Kilmarnock. He had held the position of Chief Draughtsman, which he occupied at the time of his death, for a number of years. Mr. Hanna had been a Member of the Institution of Locomotive Engineers since 1920 and had been Chairman of the Scottish Centre of the Institution for some time.

We regret to record the death, at the age of 57, of Mr. T. H. Shields, Assistant to the Motive Power Superintendent, Southern Region, British Railways. He served an apprenticeship at Kilmarnock, Glasgow & South Western Railway, and subsequently held positions in the Motive Power Department of the L.M.S.R. in Scotland. On the formation of British Railways Mr. Shields was engaged in the fitting out and demonstration of an instruction train for training enginemen. As a Member of the Institution of Locomotive Engineers he contributed papers on the History of Locomotive Valve Gears and the Giffard Centenary.

We regret to record the death on February 21 of Dr. Henry Winram Dickinson, an outstanding figure in connection with the history of engineering and technology. He was born in Ulverston, Lancashire, on August 28, 1870, and served an engineering apprenticeship. After gaining experience as an engineering draughtsman and as assistant engineer on the erection of new steel works plant at Frodingham, he secured an appointment in 1895 as a junior assistant at the Science Museum. Here he had a distinguished career and retired in 1930. Ten years earlier he was one of the founders of the Newcomen Society and became Honorary Secretary. After his retirement this Society was his principal interest, and its world-wide reputation was achieved largely as a result of his energy and enthusiasm. His many biographical works of such early engineers as James Watt, Robert Fulton, and Richard Trevithick will ensure him a lasting place as an engineering historian, as also will the numerous monographs from his pen and papers which he presented to technical societies throughout the world.

New Steamer for Southampton-Le Havre Service

(*Concluded from page* 270)

seats instead of individual arm chairs. The buffet also provides service to this lounge. A smoke room for third class passengers is arranged abaft the third class lounge, with a well-appointed bar in a recess at the after end.

On the upper deck there is a restaurant with accommodation for 104 first or third class passengers. It extends the full width of the vessel and large side windows provide an excellent view.

Coinciding with the introduction of the *Normannia* on this route, a feature of the London-Paris service *via* Le Havre has been the inclusion of Pullman cars in boat trains between Waterloo and Southampton. Passengers holding first class tickets can reserve Pullman seats on payment of a supplementary fee of 4s., in addition to which a Pullman buffet car with bar is available to all passengers without payment of an extra supplement.

Amended Passenger Charges Scheme Confirmed

London Area rail and road fares altered from March 2, British Railways provincial fares from May 1

The Transport Tribunal on February 27 made an order putting into effect the British Transport Commission Passenger Charges Scheme, 1952, from March 2 for British Railways in the London Area and for London Transport rail and road services, and from May 1 for British Railways outside the London Area. The Passenger Charges Scheme, 1952, is the draft Scheme of 1951 as altered by the Tribunal. The 1951 Scheme was submitted by the B.T.C. to the Tribunal in April, 1951; it was described and discussed in our issue of April 20. The Transport Tribunal, of which Mr. Hubert Hull is President, began its public hearing of the Scheme on October 8, 1951, and sittings lasted until December 3. On January 18, the Tribunal announced its conclusions on the Scheme, but pointed out that they could have no legal effect until embodied in an amended scheme, *i.e.*, the Passenger Charges Scheme, 1952, which must be formally confirmed. The Tribunal conclusions were summarised and commented on in *The Railway Gazette* of January 25.

BRITISH RAILWAYS IN LONDON AREA

All fares shown are third class. In each table the first figure shown is the former, and the one below the new fare.

—	E.R. (Tilbury Line) Fenchurch St.–Southend (36 miles)	E.R. Liverpool St.–Brentwood (19 miles)	L.M.R. Broad St.–Watford Jc. (22 miles)	S.R. Victoria–E. Croydon (11 miles)	W.R. Paddington–Southall (10 miles)
	s. d.	s. d.	s. d.	s. d.	s. d.
Single	3 9	3 5	3 11	2 2	1 4½
	4 6	2 9	3 3	1 8	1 6
Monthly/ordinary return	none	5 8	5 11	3 5	2 2
	9 0	5 6	6 6	3 4	3 0
Early morning return	2 10	2 1	2 4	1 4	1 3
	2 10	2 6	2 10	1 7	1 6
Day return	5 9	4 0	4 8	2 4	none
	6 3	4 10	5 6	2 10	2 6
Quarterly season	222 9	152 9	166 3	104 0	97 3
	266 9	184 6	200 6	125 0	117 0

LONDON TRANSPORT RAILWAYS

From	To	Single	Early morning return	Quarterly Season
		s. d.	s. d.	s. d.
Golders Green	Tottenham Court Road	6½	8	63 6
		9	1 0	88 6
Morden	Tottenham Court Road	10	1 0	90 6
		1 2	1 5	117 0
Eastcote	Piccadilly Circus	1 3	1 5	124 3
		1 8	1 10	149 3
Whitechapel	Blackfriars	4	6	42 0
		5	8	54 9

London Area Fares

The principal alterations in the London Area (as defined in the Passenger Charges Scheme, 1951), effective from March 2 are:—

British Railways, other than London Tilbury & Southend Line: Ordinary fares reduced from 2·44d. to 1·75d. a mile; season tickets increased by about 20 per cent; and monthly return fares abolished.

British Railways, L.T.S. Line: Ordinary fares increased from 1¼d. to 1½d. a mile, rounded up to the nearest penny except for children's fares; season tickets increased by about 20 per cent.

London Transport Railway and Road Services: Ordinary rail and road (including motor bus and Green Line motorcoach) fares increased from 1¼d. to 1½d. a mile, rounded up to the nearest penny except for children's fares, with minima for Green Line fares; early morning single fares for journeys not exceeding 10 miles begun after 3 a.m. and finishing by 8 a.m. calculated on scale rising from 2d. a mile to 3d. for two miles up to 10 miles, inclusive, and early morning single road fare *plus* single ordinary fare for return journey equals early morning return rail fare; late shift workers' concession withdrawn on London Transport railways.

The tables below give examples of old and new fares in the London Areas as from March 2.

British Railways Fares in Provinces

From May 1, British Railways third class ordinary fares outside the London Area will be reduced from 2·44d. to 1·75d. a mile, and the first class fare will be 50 per cent. above the third class. The Scheme allows of an increase from 1¼d. to 2d. a mile in the third class ordinary fare from January 1, 1953.

If advantage is taken of the permitted maximum, third-class return fares from London to provincial cities will be as follow:—Birmingham, £1 10s. 9d. (present monthly return, £1 13s. 7d.); Liverpool, £2 17s. 10d. (£2 19s. 2d.); Leeds, £2 14s. (£2 15s. 7d.); Glasgow, £5 17s. (£5 19s. 11d.); Plymouth, £3 6s. 2d. (£3 7s. 8d.); and Bristol, £1 14s. 8d. (£1 15s. 11d.).

United Railways of Havana

At the adjourned annual general meeting, held on February 26, of the United Railways of the Havana & Regla Warehouses, Mr. R. G. Mills, Chairman, referred to recent developments which he described as having the appearance of tending to bring nearer the disposal of the Cuban assets of the company. He added: "I now feel that we are commencing to approach the threshold, and I put it no higher than that because experience has taught me the danger of undue optimism in these matters, of a stage when a concrete approach will be made to enter into earnest negotiations."

On the question of what was likely to be the price of the railway if the negotiations eventuated, Mr. Mills said that Dr. Dihigo, Chairman of the Cuban Government Commission with whom he had discussed the matter, had asked whether the company would be prepared to accept payment partially in cash and partially in paper.

He had replied that the company had always expected full payment in cash, but appreciated that there were several ways in which payment could be made, namely, cash and partially paper, or sugar, or a combination of the three, and that they would naturally be entitled to receive a higher price for either of the alternatives other than full payment in cash.

The amount of payment in paper depended on the nature of the paper, and payment in sugar would involve technical matters of marketing. It was therefore impossible for him to give information on this matter.

More Buffet Services Replace Restaurant Cars

Buffet cars have replaced restaurant cars on a further 40 services in five regions of British Railways as from February 25. This extension of buffet car service follows the similar replacements made in September last year, and recorded in our September 14 issue.

On the London Midland Region the buffet services are from St. Pancras to Edinburgh Waverley; Derby to Bristol; and Liverpool to Newcastle, Hull and Birmingham; with corresponding return trains. The Western Region services are between Paddington and Swansea; and Paddington and Penzance. All these services apply to one train in each direction.

On the Eastern Region three weekday trains in each direction between Liverpool Street and Ely and one each way on Sundays convey buffet cars. A similar replacement of restaurant cars with buffet cars is made on one weekday and one Sunday service each way between Marylebone and Manchester London Road.

The Southern Region changes are confined to the Waterloo-Bournemouth route,

two weekday trains in each direction being involved.

In the Scottish Region the new buffet services are between Glasgow Buchanan Street and Aberdeen; Glasgow Buchanan Street and Dundee West; Glasgow Buchanan Street and Oban; and Inverness and the Mound. All these Scottish Region changes apply to one train daily in each direction.

SS. "Normannia" Trial Cruise

Lord Hurcomb, Chairman of the British Transport Commission, was present for a trial cruise of British Railways new Cross-Channel steamer ss. *Normannia* on February 27. He was accompanied by the Hon. Pamela Hurcomb, who launched the ship last year.

Shortly after the *Normannia* had left Southampton for a cruise in the Solent, Miss Hurcomb unveiled a print of Le Havre, which she had presented to the ship. Further details of the *Normannia*, which went into service on the Southampton-Le Havre route on March 3-4, are given elsewhere in this issue.

At a luncheon on board the ship Mr. V. M. Barrington-Ward, Member, Railway Executive, welcomed the guests and apologised for the absence of Mr. John Elliot, Chairman, Railway Executive. In wishing a prosperous future to the new ship, he said he believed Southampton, Southern and success were synonymous terms.

Lord Hurcomb said he had been closely associated with shipping for many years and he thought they could look forward with confidence to the growth and success of the trade connected with the services of the *Normannia*.

Mr. J. M. Denny, Deputy Chairman, William Denny & Bros. Ltd., referred to the part played by the former Southern Railway and Mr. R. P. Biddle, Docks & Marine Manager, Southampton, in pioneering the use of the Denny-Brown ship stabiliser. Mr. Biddle replied suitably.

Among those present for the trial cruise were:—

Lord Hurcomb; Miss Pamela Hurcomb; Messrs. V. M. Barrington-Ward; J. L. Harrington, Chief Officer (Marine & Administration), Railway Executive; R. H. Hacker, Chief Officer (Continental), Railway Executive; A. J. Pearson, Chief Officer (Administration), Railway Executive; D. S. M. Barrie, Public Relations Officer, Railway Executive.

Southern Region: Messrs. C. P. Hopkins, Chief Regional Officer; H. J. Bourn, Assistant Continental Superintendent; E. W. Dean, Passenger Assistant to Continental Superintendent; F. D. Y. Faulkner, Public Relations & Publicity Officer; K. R. Ellson, Public Relations Assistant; R. P. Biddle; S. H. Isaac, Assistant Marine Manager; J. P. Campbell, Superintendent Marine Engineer; C. A. Pritchard, District Marine Manager, Southampton; Captain G. F. Jeffries, Marine Assistant; H. Unwin, Catering Superintendent, Southampton; E. R. Dewdney, Superintendent Marine Engineer, Southampton; H. J. Grant, General Assistant to Docks & Marine Manager.

Also among those present were: Messrs. F. D. M. Harding, General Manager, Pullman Car Co. Ltd.; J. Sutcliffe, Senior Engineer Surveyor, Southampton, Ministry of Transport; Admiral Michel Blot, Consul for France, Southampton; J. M. Denny; H. O. Ernst, Manager, London Office, Swiss Federal Railways; P. R. Deshayes, Managing Director, French Railways Limited, London.

Modern Coach Building in India

In our July 20, 1951, issue were described the types of coach produced by, and methods of coachbuilding at, the Hindustan Aircraft Limited (H.A.L.) workshops at Bangalore. As mentioned in our October 19, 1951, issue, this firm is building type "407" all-metal broad gauge coaches for the Indian railways. They are being turned out at the rate of about one every four days, and more than 100 have been finished.

The stock is being built by mass-production methods, sub-assemblies and parts being fed to the various stages of the assembly line, and each of the eight stages contains its own tooling, jigging, stores, and tool cribs. The structure is basically welded but riveting is also used. All steel parts are pre-treated at the H.A.L. factory by the Imperial Chemical Industries Granadine anti-corrosion process, and each coach is tested for possible leaks by spraying with powerful water jets.

The inside panelling consists of skins of Holoplast and Limpet, and a stream of air circulates between the outer and inner skins when a coach is in motion, and is expelled by 21 exhaust-type roof ventilators. As a result, it is claimed that these all-metal coaches are no hotter than the older wood-bodied types. Each coach has four compartments, two accommodating 25 men each, and two for 13 women in each; it weighs 41½ tons with full water tanks. "Embarkation" lights are provided at the doorways, which are illuminated automatically when the vehicle is at rest or is moving at speeds up to 15 m.p.h. This, it claimed, prevents unauthorised persons from boarding trains at slow speeds. To accelerate the entraining and detraining of passengers loaded with bedding and other belongings, the doors, four at each side, are 2 ft. 7 in. wide. Flush lavatories and wash basins are provided, and there are 20 fans in each coach.

The anti-telescoping measures embodied in the design are stated to have proved effective in an accident to two of the earlier type "404" coaches.

British Firms in Colombo Exhibition

Many British firms and organisations are participating in the Colombo Exhibition which opened on February 23. The English Electric Co. Ltd. exhibits include a scale model of a 660-h.p. diesel-electric locomotive; this firm has supplied a number of diesel-electric locomotives and railcars to Ceylon. W. G. Bagnall Limited is showing a model of an industrial-type 0-4-0 saddle-tank locomotive. In addition to having built steam locomotives for Ceylon for many years, including a 4-8-0 type, of which six were delivered last year.

W. G. Bagnall Limited is concerned in the manufacture for Ceylon of 25 diesel-electric locomotives, of which it is supplying the main underframes, bogies, wheels, drawgear, and so on. Ransomes & Rapier Limited, makers of the largest walking dragline in the world, have a display of models of excavators of all sizes.

Two main engines being exhibited by Ruston & Hornsby Limited are the four-cylinder horizontal type and the latest vertical diesel engine (class "YE"). H. W. Kearns & Co. Ltd. is displaying an optimetric horizontal tool-room boring machine (described in our June 2, 1950, issue). The main Babcock & Wilcox Limited exhibit is a model of the integral furnace type of boiler for power stations and large industrial plants.

Staff & Labour Matters

Dock Workers' Wages

The Arbitration Board set up to consider the wage claim of some 100,000 dock workers has awarded an increase of 1s. 6d. a day on time rates and proportionate increases for pieceworkers. The minimum daily wage will be 22s. 6d., and the minimum pay for the ordinary working week will be 123s. 9d.

The Board also agreed to the workers' demands for a second week's annual paid holiday, but claims for higher attendance money and a guaranteed week were declined.

Representatives of the dock workers decided at a delegate conference in London on February 29 to accept the award in response to their application for a substantial pay increase.

Railway Shopmen's Wage Claim

The wage claim of the railway shopmen came before the Industrial Court, under the chairmanship of Sir John Forster, on March 4. This step followed on the decision of the Minister of Labour & National Service to refer the dispute to arbitration although the N.U.R., which claims to represent the majority of the railway shopmen, had agreed to accept the Railway Executive offer to increase shopmen's wages by 8 per cent. The C.S.E.U. has rejected this offer, and it was because of the impasse at the Railway Shopmen's National Council, which is composed of representatives of the Railway Executive on one side and representatives of the N.U.R. and the C.S.E.U. on the other, that the Minister referred the dispute to the Industrial Court.

The Railway Review of February 29 states that despite the N.U.R. intention previously declared, not to be present at the Court hearing, the N.U.R. Executive Committee decided to instruct the General Secretary to be in attendance to make clear to the Court the N.U.R. policy, including concern that there must be no worsening of the present offer of the Railway Executive. It was also purposed to protect and safeguard shopmen's rates and conditions within the railway industry against any attempt to split them from the bulk of railwaymen or to identify them completely with the outside trades.

The Railway Review also refers to the necessity for reviewing the N.U.R. representation on the Railway Shopmen's National Council, which at present stands at three, compared with nine representatives from the C.S.E.U. and two joint secretaries, one from the N.U.R. and one from the C.S.E.U.

G.N.R.(I.) Apprentices' Claim

The Dublin Labour Court last week heard the case of 172 apprentices employed by the G.N.R.(I.) at Dundalk for parity of rates between those employed in Dublin; nine trade unions were concerned.

The case for the unions was that they had assumed that a recommendation by the Court last July meant that the Dundalk apprentices would get the same rates as C.I.E. apprentices. The G.N.R.(I.) was said to be in no worse condition financially than the C.I.E., which was paying the same rate of wages to all apprentices no matter where employed. The cost of the present

claim to the G.N.R.(I.) would only be £22 a week.

Mr. R. W. Meredith, Mechanical Engineer, G.N.R.(I.), for the Company, said there were apprentices employed in Dublin at rates varying from 28s. 6d. a week for first year apprentices to 75s. a week for fifth year apprentices, while 172 apprentices were employed at Dundalk and other depots at rates of 26s. for first year up to 72s. 6d. for fifth year apprentices. This meant that the C.I.E. rate was paid to the few apprentices in the Dublin area, and that C.I.E. rates, less a differential of 2s. 6d. a week, applied to apprentices at Dundalk and other outside depots. The wages of apprentices at Dundalk had always been fixed independently, and never based on or followed C.I.E. rates.

Questions in Parliament

Maintenance of Railway Permanent Way

Mr. Hector Hughes (North Aberdeen—Lab.) on March 3 asked the Minister of Transport, in view of the fact that the permanent way of the railway systems of this island should be made national assets owing to their use in both peace and war and should be maintained at national expense, if he would consult with the Chancellor of the Exchequer, to introduce legislation to this effect.

Mr. J. S. Maclay: No. I see no ground for such action.

Mr. Hughes: Permanent way maintenance cost is the chief obstacle in the way of our railway systems being used as a really national service. Is the Minister anxious that the railways should be used as a national service, and, if so, will he not remove this obstacle?

Mr. Maclay: The suggestion has been put forward on a good many occasions. It has been studied very many times, and I do not think I can add to the reply I have given.

British Railways Rolling Stock

Mr. David Jones (Hartlepools—Lab.) on March 3 asked the Minister of Transport whether he was aware that more than 100,000 wagons still in use were about 40 years old; that many passenger coaches and locomotives were of the same age; that their maintenance in service was inefficient; that the allocation of steel to the Railway Executive was insufficient to meet their day-to-day replacement needs; and what steps he was taking to see that additional supplies were made available.

Mr. J. S. Maclay: We are fully aware of the railways' needs and are most concerned that they cannot at present be met, but steel supplies are so short that no users have all they need even for essential purposes. While the railways' allocation of steel compares not unfavourably with the allocations for other essential uses, the urgent need to improve their allocation as soon as possible is fully recognised.

Pensions of Railway Executive Members

Mr. Douglas Houghton (Sowerby—Lab.) on March 3 asked the Minister of Transport what undertakings were given as to employment and pension rights when their terms of office expired in 1952, to the whole-time Members of the Railway and London Transport Executives who were previously Chief Officers of the main-line railways and the L.P.T.B.

Mr. J. S. Maclay: There are seven such members in the two Executives named. With four of them, who will not reach the age of 60 this year, their terms of appointment provided that if they were not reappointed, or offered reasonably comparable employment, they would be entitled to such compensation as may be payable under Section 101 of the Transport Act. With the other three, their terms of appointment provided that their appointment as Members did not deprive them of any right to compensation which they may have under the Regulations.

Mr. Houghton: Does that mean that in the event of these officers being reemployed by their former undertaking, those who have been promoted to follow them will be displaced?

Mr. Maclay: Mr. Houghton should study my reply.

Future of Road Haulage

Mr. A. Edward Davies (North Stoke-on-Trent—Lab.) on March 3 asked the Minister of Transport when he expected to present to the House the Government proposals for the future of the road haulage industry.

Mr. J. S. Maclay: I am not yet in a position to add to the statement made by the Home Secretary, Sir David Maxwell Fyfe, on November 12.

Mr. James Callaghan (South East Cardiff—Lab.) on March 3 asked the Minister of Transport, in view of promised legislation on road haulage, how many road hauliers whose businesses were in process of being acquired when the present Government took office, had taken advantage of the offer to suspend negotiations.

Mr. J. S. Maclay: I am informed that 63 of the 95 hauliers concerned accepted the B.T.C. offer of postponement of the vesting date for six months.

Scottish Transport Users' Consultative Committee

Major W. J. Anstruther-Gray (Berwick & East Lothian—C.) on March 3 asked the Minister of Transport what recommendations he had had from the Transport Users' Consultative Committee for Scotland during 1951.

Mr. J. S. Maclay: Under the Transport Act, minutes and recommendations of the Transport Users' Consultative Committee for Scotland, and those for Area Committees, are required to be sent to the Central Transport Consultative Committee for Great Britain, and not to me. The Central Committee pass on to me such recommendations of the other Committees as they deem proper. They followed this course in the matter of proposed alterations in the Clyde steamer services which I had remitted to the Scottish Committee for consideration.

B.T.C. Police Pay

Lt.-Colonel Marcus Lipton (Brixton—Lab.) on February 21 asked the Minister of Labour whether he had yet appointed an independent chairman under Section 97 of the Transport Act, 1947, to settle the claim of B.T.C. Police for parity of pay and allowances with other police forces.

Sir Walter Monckton in a written answer stated: I have now nominated an independent chairman in accordance with Section 97 (2) of the Transport Act.

Collapse of Footbridge

Mrs. Barbara Castle (East Blackburn—Lab.) on March 3 asked the Minister of Transport, whether, in view of the unsatisfactory state of some railway property revealed by the collapse of a footbridge at Bury station on January 19, he would examine the need for an increase in the capital investment programme of the railways.

Mr. J. S. Maclay: I am advised that the collapse of the wooden footbridge at Bury cannot be ascribed to any limitation of the railway investment programme. In regard to the general question of restrictions on capital investment, the needs of the railways have been given very full consideration by H.M. Government in deciding on the proper allocation of available capital resources.

Mrs. Castle: This accident has caused widespread concern as revealing the antiquated nature of much railway property which the Railway Executive cannot deal with because of the limitations on its capital investment programme. The railways ought to have an extremely high priority in capital investment in view of the deplorable state of the railways when the Railway Executive took them over.

Mr. Maclay: I must confine myself to the limited application of the question, which was not one of capital investment involved, but the erosion of a number of wrought iron supports.

Sir Waldron Smithers (Orpington—C.): Is it not a fact that the general deterioration of railway property is entirely due to nationalisation?

Mr. Ellis Smith (South Stoke-on-Trent—Lab.): Did investigation show that the iron work could not be seen by the naked eye as it was covered by woodwork and that only when the woodwork was removed could the state of the iron be seen? If so, could arrangements be made to obviate that kind of thing in future?

Mr. Maclay: I would need notice of the detail of that question, but the fact is that improved methods of inspection of railway bridges have been introduced and were introduced shortly before this accident took place, but, unfortunately, they had not been used on this particular bridge.

Unemployment and Raw Material Supplies

Mr. David Jones (Hartlepools—Lab.) on March 3 asked the Minister of Transport, what representations he had received from the railway trade unions about the dismissal of hundreds of skilled craftsmen from the railway workshops because of the shortage of raw materials, particularly steel, and about the effect on railway workshop efficiency of the break-up of the labour force; and what steps he proposed to take.

Mr. A. J. Champion (South East Derbyshire—Lab.) also asked the Minister of Transport, what steps he was taking to secure a sufficient allocation of steel to enable the B.T.C. to proceed with necessary renewals of railway equipment and to prevent further loss of skilled staff from railway workshops.

Mr. J. S. Maclay: In January, the N.U.R. made representations to me in general terms. We are naturally concerned about the effect of shortages of raw materials on the efficiency of the railways and on railway staffs. The Government fully appreciates the extent of the railways' needs, and as soon as it is possible their supplies will be increased.

Mr. Jones: The increasing inefficiency in the railway service in due largely to the steel shortage precluding the B.T.C. from bringing up-to-date their rolling stock. The shortage of steel is causing the break-up of the qualified labour force.

Mr. J. S. Maclay: We have to remember that this applies to other industries as well. The railways are kept very fully in mind at all times.

Mr. William Ross (Kilmarnock—Lab.): The break-up of the skilled labour force will be greatly increased in Scotland by

the deliberate closing of a century-old railway workshop in Kilmarnock. Will he look into this very quickly, as it will eventually affect all Scotland?

Mr. J. S. Maclay: Under the Transport Act, decision on individual works is a matter for the B.T.C. and the Railway Executive.

Steel Output

Mr. C. R. Bence (East Dumbartonshire—Lab.) on February 25 asked the Minister of Supply what steps he was taking to improve the output of steel.

Mr. Duncan Sandys wrote in reply: The expansion of the output of steel depends primarily on obtaining increased supplies of raw materials. The procurement of materials is the task of the steel industry. However, the Ministry of Supply maintains very close touch with the industry in this important matter and I am satisfied that every effort is being made to improve the position.

Nationalised Industries

Mr. W. R. D. Perkins (Stroud & Thornbury—C.) on February 26 asked the Prime Minister whether he would consider appointing a committee to investigate all undertakings which had been nationalised for seven years or more.

Mr. Winston Churchill in a written answer stated: It would be unwise to lay down any fixed formula for the review of nationalised industries whether as regards the method or the timing of the review. It is better at present for the Government to pursue its consideration of these industries as they come before us.

Flat Rate for Fish

Mr. M. Donnelly (Pembroke—Lab.) on February 25 asked the Minister of Food whether he would expedite the White Fish Authority's consideration of a flat rate for transportation of fish.

Major Lloyd George: I understand that the White Fish Authority is now working out the details of its transport scheme.

Contracts & Tenders

The order for 30 bogie high-side wagons placed with the Cambrian Wagon Works Limited by the Nyasaland Railways, which was recorded in our December 7, 1951, issue, has been increased to 60.

The French National Railways have recently placed the following contracts:—

Acieries du Nord, Paris: 20 400 h.p. shunting locomotives.

Anciens Etablissements Brissonneau et Lotz, Creil (Oise): 19 600 h.p. electric locomotives.

Baume & Marpent, S.A., Marpent: 750 covered wagons.

Compagnie Electro-Mecanique, Paris: five "CC" electric locomotives.

Compagnie Francaise de Materiels de Chemins de Fer, Paris: 800 flat wagons.

De Dietrich et Cie, Niederbronn: 15 600 h.p. railcars for long-distance service.

Les Ateliers de Construction du Nord de la France et des Mureaux, Paris: 20 300 h.p. railcars.

Regie Nationale des Usines Renault, Billancourt (Seine): 20 150 h.p. railcars; one 840 h.p. diesel locomotive with non-electric transmission.

Societe des Etablissements Carel, Fouche et Cie, S.A., Paris: One Budd type railcar with Hercules engine.

Societe Generale de Constructions Electriques et Mecaniques Als-Thom, Paris: five "CC" electric locomotives.

A recent Reuter's report states that Belgium is to deliver railway rolling stock worth 60 million francs to Israel.

The closing date of the call for tenders for diesel-electric locomotives and various types of wagons for the Sorocabana Railway, Brazil, which was issued recently by the Secretariat of Transport & Public Works of the State of Sao Paulo, has been extended to 2.30 p.m. on April 30, according to a recent report by the Board of Trade, Special Register Information Service. Reference to the tender previously was made in our February 15 issue.

The Board of Trade, Special Register Information Service, has recently reported that the Belgian State Railways have issued a call for tenders (No. 2652/230) for two turntables of 7-m. dia. Tenders should reach the Société Nationale des Chemins de Fer Belges, Direction du Materiel et des Achats, Brussels, before March 19.

A copy of the tender documents is available for inspection by representatives of United Kingdom manufacturers at the Board of Trade, Commercial Relations & Exports Department, Horse Guards Avenue, S.W.1. A further copy is available for loan to United Kingdom manufacturers in order of written application to the Department. Reference CRE/8129/52 should be quoted.

A further report from the Board of Trade, Special Register Information Service, states that the Director-General, Railways, Government of Pakistan, has issued a call for tenders for wagons as follows:—

Closing date 12 *a.m. on April* 18

100 broad-gauge low-side open wagons "OM" type

54 broad-gauge high-side open wagons "OH" type

536 broad-gauge high-side open wagons "O" type

Closing date 12 *a.m. on April* 21

162 broad-gauge dismantled oil-tank wagons "TO" type

Closing date 12 *a.m. on April* 23

600 metre-gauge "MCJ" type covered jute wagons

Tenders should be addressed to the Office of the Director-General Railways, Railway Division, Ministry of Communications, Government of Pakistan, Karachi. A copy of the tender documents is available for inspection by representatives of interested United Kingdom manufacturers at the Board of Trade, Special Register Information Service. Further copies may be obtained from the Office of the Pakistan High Commissioner in London.

ROAD CASUALTIES.—Casualties resulting from road accidents in 1951, the first complete year since abolition of petrol rationing, totalled 216,493, including 5,250 killed and 52,369 seriously injured. In 1950, when there were seven months without petrol restrictions, the killed numbered 5,012, seriously injured 48,652, and slightly injured 147,661, a total of 201,325. The 1951 total was 16,866 less than in 1938, when casualties totalled 233,359, including 6,648 killed. Casualties in December, 1951, were 18,187, including 521 killed and 4,578 seriously injured. This, states the Ministry of Transport, is the heaviest monthly total for ten years. More than one-sixth of the casualties occurred on the last four weekdays before Christmas, when 3,226 persons were injured, 101 fatally.

Notes and News

Walham Green Station Renamed Fulham Broadway.—Walham Green Station, on the District Line of London Transport, has now been renamed Fulham Broadway.

Draughtsman Required.—Cravens Railway Carriage & Wagon Co. Ltd., Darnall, Sheffield, has vacancy for a draughtsman. See Official Notices on page 279.

Vacancies with a Life Assurance Office.—A leading mutual life assurance office requires a number of young men for training as Inspectors. See Official Notices on page 279.

Railway Draughtsman-Surveyor Required.—Applications are invited for the post of railway draughtsman-surveyor, between 25 and 30 years of age, required by a firm of railway contractors. See Official Notices on page 279.

Railways Damaged in Japanese Earthquake.—Considerable damage was caused to railways in Northern Honshu and Hokkaido, Japan, by an earthquake and tidal waves on March 4. A train was derailed in a tunnel when the main line to Nemuro, in Hokkaido, was broken.

Express Stopped in Box Tunnel.—The 1.22 train from Taunton to Paddington on March 3 was stopped in Box Tunnel for 51 min. when the locomotive, "Britannia" class No. 70020, *Mercury*, failed. After being assisted out of the tunnel by another locomotive, the train continued to London with its train engine.

Train Dynamited in Malaya.—A passenger train of the Malayan Railway running between Gemas, in Johore, and Mentakab, in Penang, was dynamited by terrorists on March 3. Seven persons were killed and 15 injured. The train was derailed and one coach and an armoured railway wagon were damaged. It is reported that services on the east coast section have been cancelled until further notice.

Luncheon to District Operating Superintendents, Lincoln.—Mr. H. C. Johnson, Divisional Operating Superintendent (Western), Eastern Region, recently gave a luncheon to the present and retired District Operating Superintendents, Lincoln, at the Great Northern Hotel, Lincoln. Among those present were Messrs. G. W. Stewart, I. G. MacGregor, F. Patman, C. Hartman, G. Sutcliffe, E. J. Stephens and F. Probert.

Vickers Limited.—At a meeting of the board of Vickers Limited held on February 22, the following final dividends in respect of the year 1951 were declared: preferred five per cent. stock, 2½ per cent. actual, less income tax; five per cent. preference stock, 2½ per cent. actual, less income tax. Dividend of £2 1s. 3d. net per £100 stock was declared on the cumulative preference stock. Payment will be made on March 28 next.

Serious Accident in Brazil.—More than 120 persons were killed and some 200 were injured when a suburban electric train of the Central Railway of Brazil ran into derailed coaches of another train at Anchreta, eighteen miles south of Rio de Janeiro. The second train, which became derailed on a bridge over the River Pavuna, was bound from Rio to destinations in the State of Minas Geraes. The electric train was travelling from Nova

Iguaçu to Rio. Reports state that nearly all coaches of both trains were wrecked. The derailment is said to have been caused by a broken rail on the bridge.

S.A.R. Tariff Book.—A new edition of the South African Railways Tariff Book has been published, dated January 1, 1952. Copies may be obtained on application to the South African Railways, South Africa House, London, W.C.2.

Institution of Locomotive Engineers.—The annual general meeting of the Institution of Locomotive Engineers will be held at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, at 5.30 p.m. on March 19. Following the annual general meeting, Mr. J. F. Harrison will read a paper on "The Application of Welding to Locomotive Copper Fireboxes."

South Wales & Monmouthshire Railways & Docks Debating Society.—There will be a transport quiz at a meeting of the South Wales & Monmouthshire Railways & Docks Lecture & Debating Society to be held in the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m. on March 19. The question master will be Mr. H. G. Bowles, Assistant Chief Regional Officer, Western Region.

British Railways Coal and Steel Carryings.—The biggest weekend clearance of coal from pitheads and opencast sites for over 11 months, except for the peak weekend before Christmas, December 15-17, was recorded for the 48 hours ended 6 a.m. on March 3, when 425,290 tons were conveyed, making a total of 3,162,340 tons for the week. The latest figures for iron and steel show that 200,696 tons were conveyed from the principal steelworks during the week ended February 23.

English Electric Co. Ltd.—Available profit of the English Electric Co. Ltd. for 1951 increased by £672,705 over the previous year, reaching a total of £3,948,525. Fixed assets, land and buildings were £670,033 higher at £4,159,100, and plant and machinery, at £4,304,958, showed an increase of £479,452. The directors recommend that the authorised capital be increased by £2,000,000 ordinary shares to a total of £10,000,000. The whole of the share capital with the exception of 56,059 ordinary shares has now been issued, but no further issues are contemplated at present.

Blisworth-Stratford-on-Avon Service to be Withdrawn. — British Railways (London Midland Region) is to withdraw the passenger train service between Blisworth and Stratford-on-Avon as from April 7. The L.M.R. stations at Towcester, Blakesley, Morton Pinkney, and Byfield, and the W.R. stations at Kineton, Ettington and Stratford-on-Avon (Old Town) on and from that date will deal only with traffic conveyed at freight train rates; the present road motor collection and delivery services in the area will be continued. Alternative facilities for travellers will be provided at Culworth Station for Morton Pinkney passengers, and at Woodford Halse Station for Byfield passengers; also by omnibus services operated by United Counties, K.W., Midland "Red" and Stratford-upon-Avon Blue Motors.

Dorman Miniature Circuit Breaker.—As a result of the success of the demonstrations of the Dorman Miniature Circuit Breaker in London last November, Dorman & Smith Limited has arranged to give four demonstrations in Glasgow on March 18 and 19, dealing with the technical aspects and applications of the product. Those who wish to attend should apply to the Manchester offices of the firm. The demonstrations will be held at the St. Enoch Hotel, Glasgow, at 11 a.m. and 3 p.m. on each day.

Crown Agents for the Colonies.—Applications are invited for the post of Assistant Establishment Officer, not over 35 years of age, required by the Government of Nigeria for the Railway Department for one tour of 18 to 24 months with prospect of permanency. See Official Notices on page 279.

Portable Inspection Lamp.—An improved design of self-contained, portable inspection lamp has been produced by Nife Batteries Limited. Known as the P.6, the equipment consists of a 6-8 V. nickel-cadmium alkaline battery of miner's lamp design, carried on the back of the operator, connected by flexible cable to the projector, and using a double-filament bulb. Of all-steel construction, the battery contains

Nife portable inspection lamp and battery equipment in use

six cells of sufficient capacity to provide up to four hours' light on the major 18W. filament, and about 20 hours' on the 3 W. reserve. A switch is positioned by the projector handle to provide for ease of control. The weight of the equipment is 14 lb., the battery charging rate 2-amps. for seven hours, and the maximum candle power 15,000. The battery case, which is of leather, measures 10¼ in. × 8¼ in. × 1¾ in.

Another Sleeping Car Football Excursion.—Two sleeping car excursion trains will run tomorrow, March 8, from Newcastle to Portsmouth for the sixth round of the F.A. Cup. Both trains were fully booked in advance to their capacity of 166 sleeping passengers each, and there was a waiting list. The trains will be composed of six third class sleeping cars, two open saloons, and a kitchen car from which breakfast will be served on the outward journey and supper on the return. A similar excursion to Swansea on February 22 (see our February 29 issue) was the first sleeping car train run for an English Cup football match.

Institute of Transport.—At a meeting of the Institute of Transport to be held at the Jarvis Hall (R.I.B.A.), 66, Portland Place, W.1, at 5.45 p.m. on March 24, Mr. Gordon Russell, Director, and Mr. George Williams, Industrial Officer (Transport), Council of Industrial Design, will present a paper on "Design in Transport."

"Devon Belle" to run this Summer.—It has been decided to continue the operation of the "Devon Belle" Pullman train this summer. Previously, as reported last week, it had been intended to withdraw the service, but it has been announced subsequently that the train will run at week-ends during the summer from Fridays to Mondays inclusive.

Thos. Cook & Son Ltd., at Keighley and Exeter.—New branches of Thos. Cook & Son Ltd., have been opened at Keighley (Omnibus Station, Lawkholme Crescent) and Exeter (243, High Street). Mr. A. S. Rolls, formerly with Cook's Bradford branch, is the Manager at Keighley, and Mr. C. H. McClelland, previously at the London Wall office, is the Manager at Exeter.

Nice-Bordeaux Express Derailed. — The night express from Nice to Bordeaux was derailed on the morning of February 29 after colliding with a lorry at a level crossing near Agen, between Toulouse and Bordeaux. Some passengers were injured. A goods train on the other line ran into the wrecked lorry and the express, but remained on the rails. Trains between Bordeaux and Toulouse are being re-routed temporarily through Brive and Montauban.

P.F.B. Film Service.—Petroleum Films Bureau, 29, New Bond Street, London, W.1, draws attention in a catalogue to the films which it offers on free loan to any responsible organisation. The titles include "Oil Reviews," which features main-line diesel traction, and "The Diesel Story." Applicants should state whether the 35 mm. or 16 mm. sizes, sound or silent, are required, the dates on which and period for which the films are required, and the audience to which the films are to be shown.

Ilkley Railway Convalescent Home.—The Trustees of the Railway Convalescent Homes have had plans prepared for rebuilding the wing of the home at Ilkley in Yorkshire, completely destroyed by fire in 1945; a licence has been granted for over £13,000 for this purpose, and work began recently. The plans provide for a much larger wing than that destroyed. The new wing includes two new wards for patients, one on the first floor and one on the second floor; in each case there will be a bathroom and toilet adjacent. It also provides for a large smoke room, writing room, and new staff accommodation.

Isle of Man Railway Company.—The accounts for the year ended December 31, 1951, of the Isle of Man Railway Company show that expenditure on capital account was £370,177. Receipts were £369,529. Expenditure on revenue account was £78,136 (£78,491), and receipts were £84,866 (£88,635). After the addition of last year's balance and interest on investments, and subtraction of interest on debenture stock, rent charges, and so on, £8,762 remained available for dividends. The payment of dividends at the rate of

LEGAL AND OFFICIAL NOTICES

IN THE COURT OF THE TRANSPORT TRIBUNAL

TRANSPORT ACT, 1947—PART V

THE BRITISH TRANSPORT COMMISSION (PASSENGER) CHARGES SCHEME, 1952

The British Transport Commission hereby give notice, pursuant to an Order of the Court dated the 27th day of February, 1952, that the Transport Tribunal, in pursuance of the powers vested in them under the Transport Act, 1947, have confirmed the British Transport Commission (Passenger) Charges Scheme, 1952, and have ordered that it shall come into force as follows:—

(*i*) Parts I and III of the said Scheme and, in so far as they relate to any services or facilities for the carriage of passengers and their luggage provided by the Railway Executive upon the London Lines, or by the London Transport Executive, Parts II, IV, VI, VII and VIII of the said Scheme, on 2nd March, 1952.

(*ii*) Parts II, IV, V, VI, VII and VIII of the said Scheme, in so far as they relate to any services or facilities other than those specified in (*i*) above, on 1st May, 1952.

NOTICE IS FURTHER GIVEN that, pursuant to the said Order of the Court, the said Scheme will be printed and published as soon as practicable and will be offered for sale at H.M. Stationery Office, York House, Kingsway, London, W.C.2, or its branches, or through any bookseller at the price of three shillings per copy.

S. B. TAYLOR,
Chief Secretary,
British Transport Commission.

27th February, 1952.

WE buy used or unserviceable Steel Files at good prices in lots of 2 cwt. or more.—THOS. W. WARD LTD., Reusable Steel Dept., Albion Works, Sheffield.

FOR SALE: Broadbent 6-ft. Heavy Duty Boring and Facing Lathe. With 5-ft. 6-in. gear-driven chuck. All-geared head driven by 15-h.p. motor, 400/3/50. Wt. about 13 tons.—H. BELL (MACHINE TOOLS) LTD., Walter Street, Leeds, 4. Tel. 37398.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2*s*. By post 2*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

DRAUGHTSMAN required by Gloucester Railway Carriage & Wagon Company, Gloucester, preferably with Steel Car or Diesel Car experience. 5-day week. Pension Scheme in operation. Apply LOCAL MINISTRY OF LABOUR AND NATIONAL SERVICE.

WORKS MANAGER for Locomotive Workshops, Southern Railway of Peru required. Must be a Mechanical Engineer with practical locomotive workshop experience. Preferably 35/40 years of age and with a knowledge of the Spanish language. Apply to the Secretary, PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

THE PERUVIAN CORPORATION LIMITED — CIVIL ENGINEERING DRAUGHTSMAN for Southern Railway of Peru, age 25 to 30. Knowledge of instrument work, design of reinforced concrete and steel constructions and some practical experience. Duties not confined to drawing office. Scope for energetic worker. Apply to the Secretary, 144, Leadenhall Street, London, E.C.3.

LOCOMOTIVE, CARRIAGE and WAGON SENIOR DRAUGHTSMAN 30/35 years of age. Qualifications: Must have served a full general apprenticeship in an Engineering workshop (preferably Railway) and have had at least five years' drawing office experience with some time in an executive capacity. A knowledge of Spanish an advantage. Future prospects. Apply to the Secretary, PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

RAILWAY DRAUGHTSMAN-SURVEYOR. Required by large firm Rly. Contractors. Applicants must have ability to carry out site surveys, plot same in Layout form to good working scale (detailing for manufacture of turnouts, etc., done by other Draughtsmen), capable of full use Theodolite and Level. Duties to include site supervision of Contracts in progress. Age 25/30 years. Man with British Standard Specification experience preferred. Conditions of employment to include provision of car, all travelling and general expenses. Five-day week on rota system. Comprehensive Superannuation Scheme, etc. Write in first place, stating age, experience and salary required.—Box 425, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

JUST PUBLISHED.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10*s*. 6*d*.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

CROWN AGENTS FOR THE COLONIES

ASSISTANT ESTABLISHMENT OFFICER required by the Government of Nigeria for the Railway Department for one tour of 18-24 months with prospect of permanency. Salary £711 rising to £1,042 a year including allowances. A higher commencing salary may be allowed in certain cases. Outfit allowance £60. Free passages for the officer and his wife and assistance towards cost of children's passages or their maintenance in the United Kingdom. Liberal leave on full salary. Candidates not over 35 must be educated to matriculation standard and have had experience in dealing with staff work in a large undertaking. Preference will be given to candidates who have followed a course of study on personnel management or secretarial practice. Apply at once by letter, stating age, full names in block letters and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting on letter M.29151.C. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

DRAUGHTSMAN required, preferably with experience of railway rolling stock design. Salary in accordance with previous experience and qualifications.—CRAVENS RAILWAY CARRIAGE & WAGON CO. LTD., Darnall, Sheffield, 9. Apply Employment Exchange.

A LEADING Mutual Life Assurance Office requires a number of young men for training as Inspectors. Exceptional opportunities for advancement to those possessing a sound education and good personality, and who are prepared to work hard and prove their ability. Write stating age to Box 419, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s*. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

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5 per cent. on the preference and 2½ per cent. on the ordinary share capital is recommended. The ordinary general meeting was held in Douglas on March 5.

Leopoldina Terminal Scheme.—Mr. Justice Vaisey in the Chancery Division sanctioned on February 25 the scheme of arrangement between the Leopoldina Terminal Company and holders of the company's five per cent. first debentures (bearer) and ordinary stock.

Sale of Victoria Hotel, Bradford.—The Victoria Hotel, Bradford, has been bought by private treaty by Frederick Hotels Limited from the Hotels Executive. The purchase price is not disclosed but is understood to be about £60,000, the withdrawal figure at the recent auction.

Associated Commercial Vehicles Limited.—In his speech at the 40th annual general meeting of Associated Commercial Vehicles Limited, on February 20, the Chairman and Managing Director, Lord Brabazon of Tara, made special mention of the company's diesel railcar activities. The vehicles supplied to the former Great Western Railway and to the Western Region had so far run over 17 million miles, while in Northern Ireland the G.N.R. and Ulster Transport Authority had operated the company's vehicles for approximately 1½ million miles. Various types of railcar had been ordered for single or multiple-unit operation on Coras Iompair Eireann. In the future, 24 railcars with the company's power units and transmission system would be running in Western Australia and a smaller vehicle, very suitable for short branch lines and main lines with light traffic, had now been produced. Concluding his speech, the Chairman said that they were expecting to get a little more material than had at first been promised, but would have to use it for export purposes only. These supplies, however, would fall short of their minimum export needs even if for many months they had nothing to supply to the home market.

Westinghouse Brake & Signal Co. Ltd. Profits.—The ordinary dividend of the Westinghouse Brake & Signal Co. Ltd. is being maintained at 14 per cent. despite sharply higher earnings. For the year ended September 29, 1951, the group trading profit rose from £482,881 to £707,671 and the net figure, after tax and depreciation, amounts to £330,455 (228,462).

Mond Nickel Fellowships.—The Mond Nickel Fellowships Committeee invites applications for the award of Mond Nickel Fellowships for 1952. The main object of these fellowships is to enable selected applicants of British nationality and educated to University degree or equivalent standard to obtain additional training and wider experience in industrial establishments, at home or abroad, so that, if they are subsequently employed in executive or administrative positions in the British metallurgical industries they will be better qualified to appreciate the technological significance of research and to apply its results. There are no age limits, though awards will seldom be made to persons over 35 years of age. Each fellowship will occupy one full working year. It is hoped to award five fellowships each year of an average value of £750 each. Applicants will be required to define the programme of training in respect of which they are applying for an award, as well as particulars of their education, qualifications and previous career. Full particulars and forms of application may be obtained from: The Secretary, Mond Nickel Fellowships Committee, 4, Grosvenor Gardens, London, S.W.1.

Gloucester Railway Carriage & Wagon Co. Ltd.—At a meeting of the board of the Gloucester Railway Carriage & Wagon Co. Ltd. on February 27, an interim dividend on ordinary stock of 4½d. per 10*s*. unit less income tax at 9*s*. 6*d*. in the £ on account of the year ending May 31, 1952, was declared.

Kyle of Lochalsh Jetty Reconstruction.—The Scottish Region of British Railways announces that during reconstruction of the jetty at Kyle of Lochalsh, slight delays may occur in the working of the vehicular ferry service between Kyle of Lochalsh and Kyleakin. This is due to tidal conditions at the temporarily restricted car ferry approach, and it is expected that normal working will be resumed towards the middle of this month.

Carriers' Licences.—The Minister of Transport, Mr. J. S. Maclay, has made the Goods Vehicles (Licences & Prohibitions) Regulations, 1952, which regulate the issue of carriers' licences for goods vehicles granted under the Road & Rail Traffic Act, 1933. The new regulations consolidate, with certain changes, the original regulations of 1936, subsequent amending regulations, and the Goods Vehicles (Duration of Carriers' Licences) Provisional Regulations, 1938. They come into force on April 1.

The principal change is that fees for vehicles authorised under "A" and "B" licences shall be paid in one sum instead of by instalments as at present.

Forthcoming Meetings

March 7 (*Fri.*)—Institution of Locomotive Engineers. Luncheon at the Dorchester Hotel, Park Lane, W.1, at 1 p.m. Chairman: Mr. Julian S. Tritton, President.

March 7 (*Fri.*).—Belfast Association of Engineers. Annual Dinner and Dance.

March 7 (*Fri.*).—Scottish Society of Students of the Locomotive, at 302, Buchanan Street, Glasgow, C.2, at 7.30 p.m. "The Possibilities of Railway Electrification in Scotland," by Mr. F. A. Plant.

March 8 (*Sat.*).—British Railways, Southern Region, Lecture & Debating Society. Visit to Toton marshalling yard.

March 10 (*Mon.*).—Road Haulage Association, Metropolitan & South Eastern Area. Banquet and Ball, Grosvenor House, Park Lane, W.1.

March 11 (*Tue.*). — Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. Automobile Division: "Shock Absorbers," by Messrs. J. W. Kinchin, and C. R. Stock.

March 11 (*Tue.*).—British Railways, North Eastern Region, Federation of Railway Lecture & Debating Societies, at the Co-operative Hall, Railway Street, York, at 7 p.m. "The Transport of Coal," by Mr. W. L. Kelly, Assistant Marketing Director (Transport), National Coal Board headquarters. Presentation of Federation Essay Competition prizes by Mr. H. A. Short, Chief Regional Officer, N.E. Region.

March 12 (*Wed.*).—Railway Students' Association, London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6 p.m. "Economic Problems of the Netherlands Railways in International Traffic," by Mr. D. J. Wansink, General Manager, Netherlands Railways.

March 12 (*Wed.*). — Institution of Mechanical Engineers, Graduates' Section, joint meeting with the Students' Section of the Institution of Civil Engineers, at the Institution of Civil Engineers, Great George Street, S.W.1, at 6 p.m. Debate: "The railways no longer fulfil inter-urban requirements and therefore should be replaced by trunk roads and aerodromes."

March 13 (*Thu.*).—Engineers' Guild, Metropolitan Branch, at Caxton Hall, S.W.1, at 6 p.m. Discussion: "The Problem of the Over Forties," introduced by Mr. L. N. Duguid, Deputy Chief Inspector of Factories.

March 13 (*Thu.*).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas' Street, S.E.1, at 5.45 p.m. "The Development of the Road Haulage Executive Under the Transport Act, 1947," by Mr. J. B. Garrett, Chief Officer (Organisation), Road Haulage Executive.

March 13 (*Thu.*).—British Railways, Western Region, London Lecture & Debating Society, in the Clerks' Dining Club, Bishops Bridge Road, Paddington, W.2, at 5.15 p.m. Annual general meeting, followed by "The Changing Pattern of Railway Transport," by Mr. T. H. Hollingsworth.

Railway Stock Market

With buyers still holding off until after the Budget, stock markets have been inclined to react further, though in most sections selling has not been heavy. The prevailing view is that markets are likely to recover after the Budget because this will clarify the position. The reaction in British Funds has been due mainly to the fear of additional taxation, but the view now seems to have gained ground that there will be no big tax increases other than E.P.T. and that the latter may be accompanied by some modification of the existing Profits Tax. It is said also that the 2½ per cent. Bank rate is proving effective, and that there seems no need, so far as can be judged, for a further raising of the Bank rate at this stage. The recent reaction in British Funds has increased yields on 3½ per cent. War Loan and 4 per cent. Consols to around 4½ per cent.; and there has been a tendency for industrial shares to go to a higher yield basis, because the yield on gilt-edged stocks, of course, governs the general yield structure of markets. Nevertheless, the downtrend in share values appears to have been indiscriminate, and it seems there will be scope for many adjustments after the Budget, particularly if there is a rally in British Funds. E.P.T. will, of course, mean that few companies will have prospects of higher dividends unless they are able to achieve a substantial advance in profits, or unless their dividend payments in recent years have been very conservative in relation to earnings. Nevertheless, most companies which can maintain earnings will generally be able to keep dividends at last year's rates, despite E.P.T.

Although there was rather more business passing in foreign rails, price movements have been small on balance and no outstanding features developed. There has been a little further selling of Antofagasta stocks, the ordinary easing to 15½ and the preference to 62½. Leopoldina ordinary at 11⅛ and the preference at 28⅛ have been firm, holders taking the view that total pay-outs are likely to exceed current market prices.

An illustration of how repayments can exceed original estimates has been provided recently by the second liquidation payment of 25s. per unit on Great Western of Brazil preferred ordinary, and also by the announcement in respect of La Guaira ordinary stock. The latter has again changed hands around 108.

United of Havana stocks have recorded minor fluctuations, now it seems that in any case some time is likely to elapse before any definite take-over offer is made. United of Havana 1906 debentures have changed hands around 18, while the 5¼ per cent. Cuban debentures marked 6¾ and Havana Terminal 5 per cent. debentures changed hands around 64½.

Chilian Northern 5 per cent. first debentures were dealt in at around 38. Nitrate Rails shares were 21s. and Taltal 18s. 3d.

There was a firmer tendency in Leopoldina Terminal debentures, which improved to 16; the ordinary units remained at 9d. San Paulo 10s. units were again slightly lower at 13s. 7½d.

Manila Railway debentures became firmer in the hope of a successful outcome to the discussions said to be proceeding in Manila on the question of resumption of interest payments on Manila Railroad bonds, which form the main asset of the Manila Railway Co. It is assumed that in any proposals due regard will be given to the substantial interest arrears outstanding. Manila Railway "A" debentures have strengthened a little to 66 at the time of writing; they would be worth some 25 points above this level if arrears were paid in full. The "B" debentures which would also be worth substantially more in the event of a favourable settlement, have been changing hands around 55, while the preference shares were 6s. 7½d.

Canadian Pacifics at $62 remained an active market on the view that, looking ahead, oil developments may very well mean higher dividends. Canadian Pacific preference stock was 62 and the 4 per cent. debentures 78.

Locomotive builders' and locomotive engineers' shares have remained firm on general expectations that the important financial results due next month will show dividends held at last year's rates. Beyer Peacock were 30s. 6d., North British Locomotive 16s. 1½d., Hurst Nelson 51s., Birmingham Carriage 33s. 9d., and Gloucester Wagon 12s. 9d. Vulcan Foundry improved to 22s. in expectation of good financial results. Wagon Repairs were 10s. 6d. and Charles Roberts 22s. 1½d.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1949/50	No. of week	Aggregate traffics to date: Total 1950/51	Aggregate traffics to date: Increase or decrease
South & Cen. America	Antofagasta ...	811	22.2.52	£ 141,290	+ 88,550	8	£ 1,103,800	+ £ 410,240
	Costa Rica ...	281	Jan., 1952	c1,495,633	+ c340,108	31	c8,756,306	+ c1,420,052
	Dorada	70	Jan., 1952	34,370	— 7,187	4	34,370	— 7,187
	Inter. Ctl. Amer....	794	Dec., 1951	$1,148,425	— $56,983	52	$13,126,431	— $339,796
	Paraguay Cent. ...	274	28.12.51	G289,547	+ G102,688	26	G8,823,911	+ G3,556,978
	Peru Corp. ...	1,050	Jan., 1952	$8,777,000	+ $758,000	30	$58,048,000	+ $3,899,000
	" (Bolivian Section)	66	Jan., 1952	Bs.16,004,000	+ Bs.1,517,000	30	Bs.111,091,000	+ Bs.26,690,000
	Salvador	100	Nov., 1951	c140,000	— c28,000	22	c635,000	+ c112,000
	Taltal	147	Jan., 1952	$2,649,000	+ $1,043,000	30	$14,926,000	+ $4,063,000
Canada	Canadian National†	23,473	Jan., 1952	17,157,000	+ 1,521,000	4	17,157,000	+ 1,521,000
	Canadian Pacific† ...	17,037	Jan., 1952	11,534,000	+ 618,000	4	11,534,000	+ 618,000
Various	Barsi Light* ...	167	Jan., 1952	23,812	— 5,220	42	332,580	+ 46,612
	Gold Coast ...	536	Dec., 1951	378,543	+ 72,605	39	2,473,919	+ 208,373
	Mid. of W. Australia	277	Dec., 1951	52,821	+ 10,980	26	357,578	+ 122,355
	South Africa ...	13,398	9.2.52	1,932,211	+ 59,922	45	85,981,236	+ 8,449,342
	Victoria	4,744	Oct., 1951	2,172,730	+ 1,149,080	17	—	—

* Receipts are calculated at 1s. 6d. to the rupee † Calculated at $3 to £1